

MINUTES OF THE BOARD MEETING

1 APRIL 2014

Present:

Bernard Quoix, President (BQ)	TOTAL
Catherine Goy, Vice President (CG)	E.ON UK
Herwart Hönen, Treasurer (HH)	RWTH Aachen
Giovanni Cerri (GC)	University Roma TRE
Chris Lappee (CL)	Vattenfall
Gary Lock (GL)	Frazer Nash Consultancy
Robert Rijdsdijk (RR)	Shell
Andy Williams (AW)	Wood Group
Christer Björkqvist (CB)	ETN
Dominique Cornut (DC)	ETN

Apologies

Pericles Pilidis	Cranfield University
Uwe Kaltwasser	MTU

Content:

1. Welcome
2. Review and approval of the MoM, Board meeting teleconference, 13 February 2014
3. Review and report of action list from the MoM, Board meeting teleconference, 13 February 2014
4. ETN Activities Update
5. Discussion on the presentation of the Articles of Association at the AGM and final planning related to the AGM and Workshop
6. ETN finances for 2013 and budget for 2014
7. Horizon 2020 calls 2014-2015: New proposals
8. Questionnaire for the user community
9. International Gas Turbine Conference (IGTC-14)
10. High Level User Meeting and dinner debate
11. Upcoming Board Meetings and events
12. Closing of the Board meeting

Annex: Review of Action List from previous Board meetings.

1. Welcome

B. Quoix opened the meeting and welcomed the Board members. P. Pilidis and U. Kaltwasser sent their apologies for not being able to join the Board meeting.

2. Review and approval of the MoM Board meeting teleconference, February 2014

The Board unanimously approved the February Board meeting minutes.

3. Review and report of action list from the MoM Board meeting teleconference, February 2014

The status of all actions is updated in the Annex.

4. ETN Activities Update

The Board took note of the Activities Update, which was circulated ahead of the meeting by the ETN office. The following comments were added by the Board:

Discussion on potential cooperation opportunities with Chinese users

C. Björkqvist explained that in November 2013, he met with the *Gas Turbine Power Generation Special Committee (AGTPG)* in order to learn more about the association and explore potential cooperation opportunities. Following this meeting, an email correspondence with Chinese partners and their interest in cooperation with Europe on specific topics has taken place. To follow-up on this, a meeting was arranged in Brussels between Eric Vogelaar, DNV GL Energy who has a lot of experience in this kind of cooperation and H. Hönen. At this meeting a list of potential fields and topics were identified in which ETN could arrange courses and/or workshops in China. C. Björkqvist reported that this offer has been sent to the Chinese partners and we are now awaiting their response.

The Board agreed that China is an interesting market and if there are good opportunities for ETN, we should pursue our cooperation with them. H. Hönen suggested finding out what the organisation could do for us and if there are real targets and objectives of what they would like to achieve, then ETN should explore further cooperation opportunities. A. Williams asked for the contact details of the AGTPG.

Action: CB to keep the Board informed on the cooperation opportunities with the *Gas Turbine Power Generation Special Committee (AGTPG)* and to circulate the contact details of AGTPG.

Fuel Quality Directive

The Board suggested ETN to explore the option of responding as an entity body to the Fuel Quality Directive, which is currently at the consultative phase. C. Björkqvist said that he will have a closer look at the Directive.

Action: CB to explore further the Fuel Quality Directive to see whether ETN should respond to the Directive.

5. Discussion on the presentation of the Articles of Association (AoA) and final planning related to the AGM and Workshop

C. Björkqvist presented the draft version of the slides he would present to the General Assembly on 2 April. The Board discussed further C. Björkqvist's presentation and made some modifications. Due to ETN's membership growth, it has become a challenge to reach the current quorum during past AGMs. In order to enable the General Assembly to take decisions during future AGMs, the Board decided to propose a quorum of 25% of the full members present or represented (compared to 50% in the current AoA). However, the Board agreed that this quorum should not relate to changes to the nature of the Association (Articles 1, 2 and 3 of the Articles of Association) or dissolution, where 2/3 of members must be present or represented in order to hold a valid vote.

6. ETN Finances for 2013 and budget for 2014

H. Hönen presented the financial results for 2013, the budget for 2014 and an outlook for 2015. The income for 2013 was EUR 658 000 (EUR 596 000 expected in the budget), which was made up of membership fees, income from events, projects and projects provisional payments. Herwart Hönen reported also that ETN spent less than expected which in total left a positive result of EUR 141 000 for 2013. However, EUR 97 000 are related to pre-payments for ongoing projects and have been put aside as provisions for the year 2014 and 2015 and EUR 38 000 has been set aside for project development costs - therefore only EUR 6 000 was added to the reserves. He also presented the outlook for 2015, where less income is expected due to the end of the H₂-IGCC project.

However, ETN has sound reserves which were build-up for situations like this. On the other hand there are opportunities to increase the income from potential new EU-funded projects which would be submitted in 2014 and if approved by the EC, could start in 2015. C. Björkqvist added that the 2015 outlook does not include any increase in membership, additional projects that might result from Horizon 2020 calls or potential industry-funded projects addressing the issues identified by the planned user-questionnaire (discussed in section 8 below).

7. Horizon 2020 calls 2014-2015: New proposals

C. Björkqvist informed the Board on the two project proposals that have been submitted under the new Research and Innovation funding programme, Horizon 2020 on 1 April 2014. He explained that both projects are a two-stage proposal – therefore if evaluated positively, ETN would have to submit full proposals in September 2014. The two projects are: *Supercritical-CO₂ Recompression Turbine Cycles: a Zero Emission and Efficient Solution (CO₂ReTurn)* and *Advanced biofuel CHP systems using micro-gas turbine technology (BioCHP-MGT)*. In both projects, ETN would be the Project Coordinator.

He also informed the Board that two other projects are currently being discussed thoroughly and is planned to be submitted in the Horizon 2020 call in September 2014: *Hybridisation CSP for gas turbines (former HYCOSOL)* and *Flexible integration*.

8. Questionnaire for the user community

G. Lock presented his draft of the questionnaire to the Board and mentioned that he would need more information/input from the utilities and oil & gas companies in order to progress further. The users involved in this project would need to send him some categories of daily issues they are experiencing in order to integrate them to the questionnaire. Board members

agreed that the questionnaire needs to be as general as possible in order to apply for both utilities and oil & gas companies. The Board also suggested linking the result of the questionnaire to the Project Board's Recommendation report in order to adjust ETN's R&D efforts accordingly.

C. Goy suggested making the questionnaire compatible with the Operational Reliability Analysis Program (ORAP). She explained that ORAP is a reliability monitoring system, which collects RAM and operations data for benchmarking and analysis and produces reports for conventional gas and steam turbine technologies.

G. Lock will send the draft and the current list of elements to be reviewed to B. Quoix and R. Rijdsdijk, which would send it to the right representative within their organisation for review and comments on both the list of elements and the scoring criteria. Based on the feedback, G. Lock would update the spreadsheet and send a final version to the ETN office who would then implement it to an online questionnaire.

Action: GL to update the draft questionnaire based on the Board's suggestions and make a list of elements that operators should focus on and review.

Action: GL to send the draft questionnaire and the list of elements to be reviewed to BQ and RR for them to send it to the right representative within their organisation.

Action: CB to incorporate the final questionnaire into an online version.

9. International Gas Turbine Conference (IGTC-14)

C. Björkqvist informed the Board on the speakers and moderators that have confirmed their participation to the event. ETN will prepare a list of potential people to invite and will circulate it to the Board and the CAB for comments.

10. High Level User meeting and dinner debate

High Level User Meeting:

C. Björkqvist reminded the Board on the theme of the 2012 HLU meeting, which focused on issues of strategic importance to the gas turbine market, particularly on ways to meet the future operational and fuel flexibility requirements within the European emissions targets, as well as ways to collectively push for further cost reduction.

For this year's event, C. Björkqvist proposed to focus on the potential impact of the LCP Directive, as it will come into force in 2016. The security of supply, the price of gas and the competitiveness might all be impacted by this Directive which will force many high pollutant coal plants to close down.

R. Rijdsdijk suggested that ETN could also write a paper on the possible consequences of the shut-down of plants from the gas turbine perspective. Since ETN would need to look at the current studies on the topic, he proposed to either ask Andre Mom, ETN President Emeritus or a University to perform the research and write the paper. The Board stressed however that the goal of this paper would not be to influence the EU institutions but to know what will happen in the future. C. Lappee proposed to ask DNV GL Energy as they did some work on the IED impacts in the past. The Board agreed with this idea and asked C. Lappee to contact a representative from DNV.

Action: CL to contact a representative from DNV GL Energy to see if they could provide some information on the impacts of the LCP Directive and maybe present this at the HLU meeting or be involved in the dinner debate.

Dinner Debate:

C. Björkqvist asked the Board to provide some ideas for the theme of the Dinner debate. The Board suggested the following topics: Power density, climate, environment, fuel flexibility, affordable gas, shale gas. C. Lappee also suggested “Reliable, affordable and sustainable”, which was welcomed by the Board.

11. Upcoming Board meetings and events

Name of Meeting	Date	Location
H ₂ -IGCC Final Meeting	13 May 2014	Brussels
Board meeting	9 July 2014	Brussels
High Level User Meeting and Dinner Debate	13 October 2014	Brussels
International Gas Turbine Conference	14-15 October 2014	Brussels

12. Closing of the Board meeting

B. Quoix closed the Board meeting.

ACTION LIST

No	New Actions	Resp.	Date
1	CB to keep the Board informed on the cooperation opportunities with the <i>Gas Turbine Power Generation Special Committee (AGTPG)</i> and to circulate the contact details of AGTPG.	CB	April 2014
2	CB to explore the Fuel Quality Directive to see whether ETN should respond to the Directive.	CB	May 2014
3	CB to set-up a meeting with GL to discuss the questionnaire.	CB/GL	April 2014
4	GL to update the draft questionnaire based on the Board's suggestions and make a list of elements that operators should focus on and review.	GL	May 2014
5	GL to send the draft questionnaire and the list of elements to be reviewed to BQ and RR for them to send it to the right representative within their organisation.	GL/BQ/ RR	June 2014
6	CB to incorporate the final questionnaire into an online version.	CB	July 2014
7	CL to contact a representative from DNV GL Energy to see if they could provide some information on the impacts of the LCP Directive and maybe present this at the HLU meeting or be involved in the dinner debate.	CL	May 2014

ANNEX

STATUS OF ACTION LIST (from MoM February Board meeting)

No	Actions	Outcome / Next action	Resp.
1	BQ to send the contact details of Dominique Louveton (Wamar, France) to the ETN office. CB to send an email on membership payment to Nabil Barakat, copying Dominique Louveton and UK.	On-going. CB to send a draft email to BQ.	BQ
2	UK to send the contact details of Nabil Barakat to the ETN office.	Done	UK
3	CB to send an email on membership payment to Nabil Barakat, copying Dominique Louveton and UK.	Deleted (included in action 1)	CB
4	BQ to send contact details of Barbara Stanley to the ETN office.	Pending	BQ
5	CB to send a formal invitation to Thierry Toupin, Siemens and Barbara Stanley Solar Turbines to participate in the Keynote session 4: OEM panel discussion.	Pending	CB
6	CB to circulate the draft programme of the IGTC-14 to the Board.	Done	CB
7	BQ to send an email to Luca Maria Graci from GE with regards to the dinner sponsorship.	On-going	BQ
8	CB to set-up a meeting with GL to discuss the questionnaire.	On-going	CB/GL
9	CB to localise a high level speaker from an oil & gas company to present a market and policy outlook at the AGM.	Done	CB
10	CG to send the project abstract on Flexible Integration to the right E.ON representative.	Done	CG
11	CB to circulate to the Board the AoA reviewed by the notary.	Done	CB
12	CB to circulate the proposed changes to the AoA to ETN members before the AGM.	Done	CB
13	HH to send to the Board the figures for 2014, the outlook for 2015 as well as the number to be added to the reserves when the final numbers are available.	Done	HH
14	CB to spread ETN reserves into different banks.	On-going. ETN cannot spread the reserves before the new office address and Board of Directors has been published officially (expected in May 2014).	CB
15	CB to circulate the agenda of the HLUM and a list of potential participants.	Pending	CB

PENDING ACTION LIST (from MoM March 2013 Board meeting)

No	Actions	Outcome / Next action	Resp.
1	BQ to invite BP to the Workshop and to follow-up on the membership discussion.	Done. BQ sent an invitation to Chris Jenner, Rotating Equipment TA.	BQ
2	CB to follow-up with the debt collector and inform BQ if the company can't collect the fee for Wamar so he could follow-up on this with Nabil Barakat.	Deleted. UK to send the contact details of Nabil Barakat in order for BQ to follow-up.	UK BQ CB
3	UK and GL to create a questionnaire template to be circulated to ETN's users.	Deleted (included in new actions)	UK GL
4	CB to prepare a presentation for the AGM explaining and justifying the reasoning and opportunities to open-up ETN to GT users outside Europe.	Done	CB
5	CB to contact Yrjo Komokallio, GTUsers to discuss partnership opportunities.	Pending. CB reported that he would contact Yrjo Komokallio in April 2014.	CB
6	BQ to invite contacts in Brazil and Middle East to speak at the IGTC-2014 under <i>Keynote Session 3: Opportunities in Regional Markets</i> .	Pending. It was decided by the Board to invite a representative from Petrobras (Brazil) and have a representative from Qatar as an alternative speaker but invite both as participants.	BQ
7	BQ to provide the name and contact information of the representative from Siemens Energy and Solar Turbine with regards to <i>Keynote Session 4: OEM Panel Discussion</i> .	Pending	BQ
8	AW to follow-up with TransCanada, Shanahan and Rolls Wood Group.	On-going. AW will follow-up in April after the first 2014 quarter.	AW
9	CB to organise separate meetings with GE, Alstom, Ansaldo, MAN, Rolls-Royce Solar and Siemens to discuss potential R&D cooperation.	Done	CB
10	RR to contact the new contact person at Gasunie about membership.	Done	CB RR
11	CL to contact RWE about membership.	Pending. CL was in contact with RWE but reported that the timing is not right. CL will follow-up at a later stage.	CL
12	CL to contact Mitsubishi about membership.	On-going. Mitsubishi Power System will merge with Hitachi Power System in 2014 for the GT department. CL has a planned meeting at the Hitachi office where he could discuss membership.	CL
13	UK to follow up with GKN for membership in a meeting set to take place at the end of December 2013	Pending. UK reported that he met with GKN in December 2013 and would send a follow-up email with more information on membership. CB suggested sending UK an email template, which he will be able to add a personal note.	UK/CB
14	ETN membership discussion at Scottish & Southern Energy.	Done. CB met with the person from Scottish & Southern Energy in Brussels and has follow-up with her (waiting for a response).	CB
15	UK to meet with Bo Pedersen of Maersk to discuss ETN membership.	Pending	UK