

MINUTES OF THE BOARD MEETING

BRUSSELS, BELGIUM, 25-26 JUNE 2013

Present:

Bernard Quoix, President (BQ)	TOTAL
Catherine Goy, Vice President (CG)	E.ON UK
Herwart Hönen, Treasurer (HH)	RWTH Aachen
Gary Lock (GL)	Frazer Nash Consultancy
Giovanni Cerri (GC)	University Roma TRE
Chris Lappee (26 June) (CL)	Vattenfall
Christer Björkqvist (CB)	ETN
André Mom (AM)	President Emeritus
Karen Geris (KG)	ETN
Dominique Cornut (DC)	ETN
Mohsen Assadi (MA)	University of Stavanger

Apologies:

Uwe Kaltwasser (UK)	MTU
Andy Williams (AW)	Wood Group
Pericles Pilidis (PP)	Cranfield University
Robert Rijdsdijk (RR)	Shell

Content:

1. Welcome
2. Review and approval of the MoM Brussels, Belgium, March 2013
3. Review of Action List from the MoM Brussels, Belgium, March 2013
4. Review of ETN Activities Update
5. New Office and Technical Project Officer
6. ETN Finances 2013-2014
7. Follow-up on the opportunity to set-up a Private/Public Partnership (PPP) proposal (Joint Technology Initiative) under the Horizon 2020 R&D funding programme
8. Project Board Report: On-going projects and project proposals
9. ETN 5-10-year vision discussion
10. International Gas Turbine Conference (IGTC) 2014: Main focus/directions to the CAB
11. New ETN Membership Information Package
12. Upcoming Board meetings
13. Closing of the Board Meeting

Annex 1: Review of Action list from previous Board meeting (from March 2013)

1. Welcome

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

2. Review and Approval of the MoM Brussels, Belgium, March 2013

The Board unanimously approved the March 2013 Board meeting minutes.

3. Review of Action List from the MoM Brussels, Belgium, March 2013

The status of all actions is updated in the Annex 1. The pending and on-going actions are detailed below with additional comments:

B. Quoix reported that he has provided the contact information of TransCanada representatives to A. Williams and has offered to follow up with TransCanada unless A. Williams has already done so.

Action: BQ to follow-up with AW to verify the status of the correspondence with TransCanada and follow-up with them accordingly.

C. Björkqvist informed the Board that the potential user members' list is not exhaustive and welcomed the Board to provide the ETN office with more potential member organisations.

Action: The Board to review and provide additional input to the list of potential member organisations from the user community and send it to the ETN office.

C. Björkqvist reported that the action on the set-up of the Emeritus Club has been delayed due to the current workload.

Action: CB give more details on the proposed structure and benefits of the Emeritus Club to the Board at the next Board meeting.

G. Lock reported that he has been in contact by email with a representative from IMechE to discuss possible cooperation but haven't received any reply.

Action: GL to follow up with IMechE.

C. Björkqvist informed the Board that he had a meeting with EVI-GTI's Board at their AGM to explore a wider cooperation and followed-up at ASME in San Antonio in June 2013. He reported that EVI-GTI is open to cooperation with ETN.

Action: CB to suggest a proposal to EVI-GTI.

C. Björkqvist stated that he had a teleconference with A. Williams and Yrjö Komokallio from Gas Turbine Users International to discuss potential cooperation. He reported that they had a positive discussion with him.

4. Review of ETN Activities Update

Power-Gen, Vienna, Austria, June 2013:

A. Mom presented the list of organisations he and K. Geris met during the Power-Gen Conference that took place in Vienna in June 2013 (provided in the meeting package). He reported that they have met with over 20 organisations and have started to follow-up with companies.

5. New office and Technical Project Officer

C. Björkqvist welcomed the Board members to the new ETN office. ETN will move into the new premises officially on 17 July 2013. C. Björkqvist informed the Board that the new office size is 230 square meters and the price is 130 euro per square meters per year, including two parking spaces and the furniture. The office has been renovated four years ago and has barely been used. He explained that comparing with the other offers of similar facilities in the same area in Brussels, the prices per square meters varied between 180 and 220 euro. ETN has signed a 3-6-9 *contract* which gives the possibility to resign without penalty every third year. If there would be a need to resign in between, ETN have the right to rent the office to another organisation to avoid any fines.

C. Björkqvist also informed the Board that the new landlord is the owner of an IT company providing customised IT support services and would therefore be able to provide a secured server. The landlord will make 2 different offers before ETN takes possession of the new office: 1) external server solution (online) or 2) internal server solution (backup everyday on a tape). The new office is already equipped with a server room.

Regarding ETN's current vacancy, C. Björkqvist reported that ETN plan to have an additional technical officer in office in August 2013.

6. ETN Finances 2013-2014

H. Hönen presented the finances and reported that in 2013 and 2014 positive results are expected. The personal cost and office costs will go up in 2013 as the result of hiring an additional technical officer and moving to a bigger office. However, the meeting costs will be reduced as the new office has a large meeting room and the income will increase due to the increased membership. H. Hönen also reported that 10 000 euro has been reserved for a new server installation in the ETN office which will increase security and reliability of data storing. Even though ETN has a sound financial situation, he reiterated the importance of new project income in 2015. C. Björkqvist mentioned that he expects new call opportunities under the upcoming R&D funding program Horizon 2020 in the beginning of 2014. He stressed the importance to be prepared to submit strong proposals in the first call in December 2013, which means that if it is evaluated successfully by the European Commission, the project could start in the end of 2014 or beginning of 2015.

H. Hönen mentioned that in case ETN does not get new members and has no new EU project by 2015, the deficit would be around 150 000 euro without a reduction of employees. He therefore reiterated the importance of having reserves.

Regarding the next calls under Horizon 2020, C. Björkqvist informed the Board about a meeting with the European Commission (EC) in DG Research that took place in June 2013 to discuss a potential call and a project proposal on hybridisation CSP with GT. He reported that it was a successful meeting and the message was well received and appreciated by the EC's representatives.

7. Follow-up on the opportunity to set-up a Private/Public Partnership (PPP) proposal (Joint Technology Initiative) under the Horizon 2020 R&D funding programme

C. Björkqvist reported that EUTurbines had a meeting at the European Commission (EC) during which they were informed that there would be no opportunities for new PPP's at this point. EUTurbines were also suggested to re-initiate discussions with the EC in 2015, with a more detailed plan.

The board members agreed that the cooperation between EUTurbines and ETN should be improved in order to be able to present the GT industry as one voice to the European institutions. A. Mom suggested arranging a meeting between Markus Tacke (Siemens) and B. Quoix to discuss further this cooperation. It was suggested that C. Lappee could join the meeting to have a representative from both the Oil & Gas industry as well as the power generation.

Action: BQ to set-up meeting with Markus Tacke (Siemens) and CL to discuss cooperation.

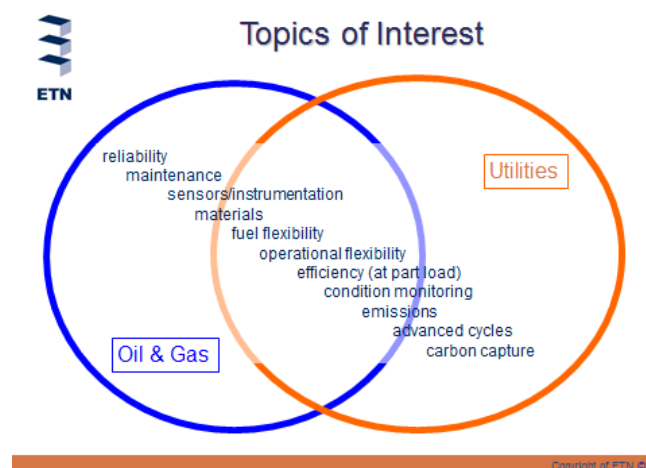
8. Project Board Report: On-going projects and project proposals

C. Björkqvist reported on the discussions and decisions taken at the Project Board meeting which took place at Statoil on 19 June 2013 in Oslo, Norway. He reported that the Project Board proposed to restructure the Technical Committees (TC) to include a TC on Low Carbon GT Operation. The Project Board thought this would be especially good for the promotion towards prospective members and the European institutions. The Project Board proposed the following TCs.

- TC1: Low Carbon GT operation
- TC2: Operational and Fuel Flexibility
- TC3: Material Degradation and Repair Technologies
- TC4: Condition Monitoring and Instrumentation
- TC5: Asset Management

C. Björkqvist also stated that the Project Board suggested building a database of State-of-the-Art reports that could be written by the students of the university partners, which was welcomed by the Board.

With regard to the earlier promised R&D recommendation report written by the Project Board members, C. Björkqvist reported that they had agreed to finalise it ahead of the upcoming Workshop. The report would include recommendations on key research topics on GT developments based on the current market outlook and users demand.



K. Geris stated that the report would be a living document and that all ETN members are welcome to contribute with their recommendations. Peter Jansohn (PSI) would present the Project Board's recommendations at the annual Workshop in October which should be used as a basis of discussion in the TC's sessions. C. Goy suggested that ETN send out a separate email announcing the dates of the October Workshop.

C. Björkqvist reported that due to the delay in receiving the minutes from some of the session chairs, the publishing of the AGM Workshop summary has been delayed. This also resulted in the fact that there has been little activity on the initiatives which were newly proposed at the last AGM in Pisa. A. Mom suggested that ETN could ask the university partners to send a student to write the minutes but C. Goy cautioned that it would be important to have the minutes be written by a person who is familiar with ETN's activities and the people involved in the initiatives. A. Mom stated that ETN should identify and contact suitable minute takers ahead of the upcoming Workshop. C. Björkqvist suggested that this would be a good example of a task that could be performed by a person in the Emeritus Club. It was also proposed to determine a deadline for the submission of the MoM for each TC and sent out the MoM even if one TC is missing.

G. Lock suggested that there should be a database of projects available to the members (eg. on the website) with the past and current projects that are on hold. A. Mom stated that the project leader should be responsible for contacting possible interested companies. H. Hönen commented that the communication between the project partners should also be increased and that the commitment of project partners should be formalised at an earlier stage. The Board members agreed that it would be beneficial to send emails dedicated to a specific project at regular intervals.

Action: ETN to send a separate email to the members with the minutes of the AGM and Workshop and informing them about the dates of the upcoming annual Workshop in London.

Action: ETN to contact possible minute takers before the annual Workshop in London.

Action: ETN to send a dedicated email for each project, at regular intervals.

9. ETN 5-10-year vision discussion

C. Björkqvist suggested that ETN should become a platform for open innovation where OEMs and other companies can bring in their ideas or issues and make them visible on the ETN member only website. This will allow ETN members to react, rather than using only a selected group of Universities and Research Centers. The Board members expressed some concerns with the management of those projects, especially if non-members are also allowed to use the ETN platform. H. Hönen stated that the system should work in such a way that it would be impossible to circumvent ETN after the initial meeting between the company with the problem and the interested companies. G. Lock stressed that the benefit of this would have to be for the ETN members and that it should eventually result in new members joining ETN. B. Quoix and G. Lock shared their experiences with using LinkedIn groups where problems are put forward and discussed with other group members, all from different companies.

C. Björkqvist stated that the intention is for ETN to be a platform for open innovation, by taking a step by step approach and mentioned that ETN needs to search for potential ways and tools that could be used.

C. Björkqvist asked the Board to write down, per category (users, OEMs, service providers, consultancies and universities/research institutes) what is good about ETN and what could

be improved. The outcome of this discussion will be added as an annex to the minutes and will be provided to the Board before the next Board meeting.

Action: ETN office should look into the possibility to have a LinkedIn group for ETN members.

Action: ETN office to send to the Board the outcome of the 5-10-year vision discussion as an annex of the minutes.

10. International Gas Turbine Conference (IGTC) 2014: Main focus/directions to the CAB

C. Björkqvist reported that the CAB for the upcoming IGTC-14 is almost complete as the ETN Office is currently contacting the last candidates. C. Björkqvist stated that the first meeting of the CAB is planned to take place in September 2013 and asked the board members to suggest topics for the Call for Papers. C. Björkqvist proposed that it would be beneficial to explore the different markets (US, Europe, Asia) as the requirements for GT differ considerably. C. Lappee suggested that one of the sessions could be dedicated to the use of simple cycle versus open cycle and the development of a high efficiency open cycle GT. He also stated that it would be important to look at the entire system rather than just the GT. C. Goy proposed to have a session on LNG and other fuels that still have a different behaviour from Natural Gas, even though the variation in Wobbe Index might be little.

11. New ETN Membership Information Package

C. Björkqvist informed the Board that the new Membership Information Package for potential members is now available on the ETN website. The purpose of the package is to illustrate ETN's structure and activities and to provide concise information on the benefits of being a member of ETN.

12. Upcoming Board Meetings

Date	Location
10 October 2013 (afternoon after the Workshop)	London, UK
9-10 December 2013	Brussels, Belgium

14. Upcoming ETN meetings and events in 2013

Event	Date	Location
Annual Workshop	9-10 October 2013	London, UK
Board Meeting (after the workshop)	10 October 2013	London, UK
Board Meeting	9-10 December 2013	Brussels, Belgium

15. Closing of the Board meeting

B. Quoix closed the Board meeting.

ACTION LIST

No	New Actions	Resp.	Date
1	BQ to follow-up with AW to verify the status of the correspondence with TransCanada and follow-up with them accordingly.	BQ	Before end of Sept.
2	The Board to review and provide additional input to the list of potential member organisations from the user community and send it to the ETN office.	Board	Before end of Sept.
3	CB to give more details on the proposed structure and benefits of the Emeritus Club to the Board at the next Board meeting.	CB	Before Dec Board meeting.
4	GL to follow up with IMechE.	GL	
5	CB to suggest a proposal to EVI-GTI.	CB	
6	BQ to set-up meeting with Markus Tacke (Siemens) and CB to discuss cooperation.	BQ	
7	ETN to send a separate email to the members with the minutes of the AGM and Workshop and informing them about the dates of the upcoming Workshop in London.	CB	July
8	ETN to contact possible minute takers before the October Workshop in London.	CB	Sept
9	ETN to send a dedicated email for each project, at regular intervals.	CB	
10	ETN office should look into the possibility to have a LinkedIn group for ETN members.	CB	Before Dec Board meeting.
11	ETN office to send to the Board the outcome of the 5-10-year vision discussion as an annex of the minutes.	CB	Before Dec Board meeting.

ANNEX 1

PENDING ACTION LIST (from MoM March 2013, Brussels, Belgium)

No	Actions	Resp.	Status
4	AW to contact TransCanada (JV with Wood Group).	AW	
9	AW to follow-up with Shanahan Engineering about ETN membership.	AW	Pending
21	CB to give more details on the structure and benefits of the Emeritus Club to the Board.	CB	Pending

ACTION LIST (from MoM March 2013, Brussels, Belgium)

No	Actions	Resp.	Status
1	CB to update the MoM London, UK December 2012 and to distribute to the Board.	CB	Done
2	CB to verify if the Gas Briefing Paper has already been sent to EC/EP contacts.	CB	Done
3	BQ to send the contact details of TransCanada representatives to AW.	BQ	Done
5	CB to set up a joint teleconference call with Mike Wood and AW.	CB	Done
6	CB to set-up a follow-up system for outstanding payments.	CB	Done
7	CB to distribute the updated version of the potential GT user member list.	CB + Board	Done
8	The Board to review the potential members' list and to verify who would be the most suitable contact person for the listed users.	Board	Deleted
10	HH and CB to prepare the result and budget presentation as well as an outlook for the coming years to be circulated and approved by the Board prior to the AGM.	HH, CB	Done
11	CB to inquire at the bank the interest rate in the case of a lower down payment and to continue the office research.	CB	Done
12	CB and HH to prepare a balance sheet, including maintenance costs and taxes, for renting vs. buying over a 10-year period, taking into account a smaller cash payment for the buying option.	CB, HH	Done
13	PP to write a proposal on ETN's vision for the PPP.	PP	Done
14	CB to set-up a meeting with EUTurbines to discuss the next steps in the lobbying process for a PPP.	CB	Done
15	CB to find out more about the opportunity to propose and set up a PPP through meetings with the European Commission.	CB	Done
16	The Board to give comments on Terms of Reference for the Project Board.	Board	Approved
17	AGM (Panel discussion): CG to ask Dave Potter (E.ON) to be a panellist, CB to ask Dick van der Vecht (GDF Suez), Heikki Oltedal (Statoil) and Sauro Pasini (Enel) to be panellists.	CG, CB	Done
18	Workshop: CB to follow-up on on-going initiatives, to send a call for new initiatives and to circulate the collected documentation to ETN members two weeks prior the AGM.	CB	Done
19	AW to provide feedback to the ETN office on the ETN benefits and successes report.	AW	Done
20	CB to circulate the Membership Information packages to the Board members for their comments.	CB	Done

Actions (from April 2012 Board meeting)	Outcome / Next action	Responsible
UK to follow up with GKN for membership	<i>Pending.</i>	UK
CB and Board to prepare plan to approach EP and EC	<i>Pending.</i> CB to prepare a letter to the EU institutions.	Board, CB
CB to draft a MoU for cooperation with EUTurbines	The MoU has been postponed.	CB
ETN membership discussion with Ronnie Glen at Scottish & Southern Energy.	<i>Pending.</i> New, higher up contact required. AW to identify a representative from Scottish & Southern Energy.	AW/CW - Mar 2013
BQ to contact Frits De Jong of Turbocare about ETN membership.	<i>Pending.</i> BQ had a membership discussion with Mr. De Jong and will follow-up with him.	BQ - Mar 2013
UK to meet with Bo Pedersen of Maersk to discuss ETN membership.	<i>Pending.</i> UK to follow-up.	UK – Mar 2013
BQ to contact BP representatives in Houston, US.	<i>Pending.</i> BQ reported that he has identified the representatives and will follow-up with them.	BQ – Mar 2013
CB to distribute the list of external contacts to Board for approval.	<i>Pending.</i>	CB – Mar 2013
Board and CB to prepare a 5-10-year vision on ETN: how to support the European GT-industry	<i>Done</i>	Board + CB
ENI membership of ETN.	<i>Done</i>	BQ, CB
CB to install mirror server in external location.	<i>Done</i> (August 2013)	CB – Mar 2013
HH and CB to make a projected balance sheet for the coming 3 years.	<i>Done</i>	HH/CB – Mar/Apr 2013
AW and CB to have teleconference with Yrjö Komakallio.	<i>Done</i>	AW/CB – Mar 2013

Annex 2

List of ETN's benefits and objectives per category

Oil & gas Users	
Benefits	<ul style="list-style-type: none"> • Networking opportunities with other users • Involvement of most of the OEMs • Addressing issues on a single platform • Opportunity to announce the needs of the oil & gas industry • Connection with the R&D community • Technology and research watch
Objectives for the future	<ul style="list-style-type: none"> • Reinforce the presence and views of users • Make major steps towards the requirements/set goals by the users for future technology developments • Set-up of a ETN event namely the <i>European Users Workshop</i> (similar format than the former GTU in US) addressing users' issues on different engines (in order to put more pressure on the OEMs) • Enhance international communications • Get the OEMs to become more active on the ETN platform (not only passive participation)

User – Power generation	
Benefits	<ul style="list-style-type: none"> • Networking opportunities and exchange of information • Coordination and administration support for projects • Influencing opportunities for R&D programme and emission policy
Objectives for the future	<ul style="list-style-type: none"> • Profit further from the three benefits above • Cooperation with EUTurbine – Become one voice (coordination work executed by ETN) • Connection with present GT user forum with links to operational experiences/commonalities and R&D needs across the GT industry (Bridging the gap between operators and future R&D developments) • Covering both short and long term

Consultancies	
Benefits	<ul style="list-style-type: none"> • Networking opportunities: understanding local/regional trends & issues/problems • Involvement in technical development projects
Objectives for the future	<ul style="list-style-type: none"> • Increasing the opportunities through an enlarged membership • Obtain more European research opportunities that would result in new projects • Increasing ETN's recognition and power • ETN should be seen as "the port to call" in the GT world

Third parties	
Benefits	<ul style="list-style-type: none"> • Networking and meeting customers • Get information on problems • Business opportunities • Opportunities to see and meet competitors • Get new ideas and input • Receiving information on market trends
Objectives for the future	<ul style="list-style-type: none"> • Establish relationships (opportunity to start long-term co-development with customers - better repairs, improved spare parts, etc.) • Receive more information on actual problems • Advertisement opportunities of our competences

R&D Community	
Benefits	<ul style="list-style-type: none"> • Networking with the whole value chain • Get to know and understand different point of views of different stakeholders • Opportunities for students <ul style="list-style-type: none"> ○ Interns ○ Studies ○ Projects
Objectives for the future	<ul style="list-style-type: none"> • Bridging the gap further between R&D basic knowledge and the industry • Increasing the communication and have more open innovation • Focus further on the structure to shorten the time from the presentation of an initiative and the actual work process of R&D projects • Shortening the problem solving period of issues from the industry • Industry should listen more to Universities • The Universities' vision should also be taken into consideration (not only OEMs' vision) • Ensure more involvement by OEM's • Remain on top of the gas turbine development