Minutes of MGT Meeting

12 May 2015, ETN office, Brussels, BE

Attendees:

Enrico Bianchi	Ansaldo - Turbec
Tatjana Dieser	Berlin Partner
Abdulnaser Sayma	City University London
Michael Mclorn	City University London
Antonio Arroyo	City University London
Lars Malmrup	Compower
Peter Berg	Brandenburg University of Technology
Mario Lehmann	Brandenburg University of Technology
Hamidreza G. Darabkhani	Cranfield University
Mark Wilksch	Delta Motorsport
Jan Terlingen	DGTA
Andreas Huber	DLR
Giusseppe Messina	ENEA
Eugenio Giacomazzi	ENEA
Andre Mom	ETN
Christer Björkqvist	ETN
Ugo Simeoni	ETN
Steffen Sebastian Kießling	Euro K
Christoph Rex	Euro K
David Barnes	Hiflux
Warren Thornton	Hiflux
Lukas Aichmayer	KTH
Michel Delanaye	Mitis
Wilfried Visser	MTT
Esmail Najafi	Samad Power
Mario Ferrari	University of Genova
Ambra Giovannelli	University Roma TRE
Hua Chen	NLETT
Apostolos Pesiridis	Brunel University London

1. Welcome and Introduction

C. Björkqvist opened the meeting and welcomed the participants. He presented the agenda and the objectives of the meeting which were to highlight the MGT manufacturers' needs and requirements for the future and to bring together the Micro Gas Turbine (MGT) supply chain in order to explore cooperation opportunities.

2. OEMs and Universities introduction

Representatives of MGT OEMs presented their company's objectives and their products' development programs. Very short introduction by the representatives of Universities/R&D institutes were given as a one page summary of the expertise of their institute. The capabilities of their facilities and the on-going research programs related to MGT technology had already been circulated to the participants - see website.

Following the presentations a Q&A session was held.

3. Discussion to explore collaboration opportunities

The roundtable discussion started with the identification of a roadmap for future cooperation on projects in order to address the most important issues that prevent the MGT technology to be widely spread into the market.
The main issues identified by the MGT OEMs were:

- High costs related primarily to the recuperator and to the power electronics.
- Low efficiency if compared to competing technologies on the market.
- Fuel flexibility.

With regards to the high costs for the recuperator it was highlighted that on the market several types of recuperators are available with different specifications, tailored to the specific OEM applications. In order to develop this technology further and to lower the costs, common research activities should be carried out with the aim of optimizing the component for the MGT applications. Therefore it is needed to specify common requirements for a recuperator that would tackle the main issues faced by the OEMs. As a first step it was agreed to draft common recuperator requirements which would constitute the basis to identify the gaps in the existing technology. W. Visser offered to draft a document with the above requirements, to be circulated to the participants of the meeting for comments and review. This document should be the basis for a brainstorm on how to proceed and if a common project proposal regarding the recuperator could be initiated.

Even though that there are niche markets where MGTs currently can compete, even with a higher cost and somewhat less efficiency, it was underlined that efficiency of the MGT should be improved in order to support the technology on the market as a valid competitor towards other systems. However, efficiency shouldn't be considered as the most important parameter of reference when comparing different technologies, but a more accurate analysis should be done. L. Malmrup proposed to draft a document in which the main hurdles of the current MGT technology (for market entry) and possible ways to bypass them are presented, taking into account the specific advantages of MGTs. This could be the basis for a future common MGT programme, and could also be used towards the European Commission to investigate funding possibilities.

Fuel flexibility was highlighted as a real asset when it comes to MGT technology, but there are still challenges with regard to stable combustion and low NOx, when it comes to unconventional fuels, that need to be addressed.

It was also agreed to look for EU funding and to submit MGT's related proposals when opportunities appear. A. Sayma would review the H2020 research programme and other international funding programmes potential calls suitable for this technology. C. Björkqvist highlighted the importance to be proactive and try to pave the way for funding opportunities. This could be done by writing a paper that would highlight the important contributions to the EU energy policy targets that the MGT technology could contribute with. Another opportunity would be to apply for a session on MGT technology during EU's sustainability week next year. ETN offered to discuss these two options with Cogen Europe.

4. Conclusions and next steps

It was proposed that 1-2 meetings per year should be organized in order to follow up on the above mentioned actions. It was agreed that the next meeting should take place in the first week of October. The exact date will be determined through a doodle request. ETN stated that they would create a webpage on its website for the group where presentations and documents could be shared.

Annex I: Action list

Action Owner	Description	Deadline date
W. Visser	Draft a document with the recuperator's requirements., input from various parties	June 2015
ETN office	Distribute above document for further comments	June/July 2015
L. Malmrup	Write down a vision on MGT technology, current hurdles for market entry and his view on the way forward	June 2015
A. Sayma	Identify suitable calls for MGT proposals.	October 2015
ETN	To discuss lobbying cooperation opportunities with Cogen Europe	June2015
U. Simeoni	To create an MGT webpage on ETN's website and upload presentations	May 2015
U. Simeoni	To circulate a doodle request to decide on the dates for the next meeting.	June 2015