**Minutes of Air Filtration Teleconference Meeting**

24 February 2021

**ETN Attendees:**

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| **Graeme Turnbull** | AAF |
| **Paul Jackson** | AAF |
| **Stefano Gino Mosele** | Ansaldo Energia |
| **Daniel Iggander** | Camfil |
| **Matthews Kevin** | Cullum Detuners |
| **Wim Van Gelder** | Donaldson |
| **Olaf Brekke** | Equinor |
| **Andrew Thomson** | EMW |
| **Ugo Simeoni** | ETN |
| **Gianluca de Arcangelis** | Faist |
| **Matthias Eber** | Fiatec Filter & Aerosol Technologie |
| **Mike Garnett** | Freudenberg |
| **Helene Fredäng** | Mann-Hummel |
| **Arne Skjelbakken** | Nymo |
| **Marcel van Zijp** | Shell |
| **Alf Erik Jakobsen** | Siemens |
| **Dominique Orhon** | Total |
| **Beth Weed** | W.L. Gore |

1. **Introduction**

U. Simeoni opened the teleconference and presented the following agenda:

1. Update on the ISO29461-1 “Air intake filter systems for rotary machinery —Test methods —Part 1: Static filter elements”.
2. ETN Position Paper – PFHxA restriction proposal.
3. Update on the ETN Water/Salt procedure.

**1. Update on the ISO29461-1 “Air intake filter systems for rotary machinery —Test methods —Part 1: Static filter elements”**

M. Garnett stated that the draft standard ISO29461-1 is a new test method that would include the ISO 16890 and the ISO 29463.

A new classification of filter efficiencies that will show the PM particle range has been included; for example, for the classes ISO T7, T8 and T9 the new particle range doesn’t correspond to the old F7, F8, F9. According to this classification, old F9 could fall into the new T8. However, the old test report would still be used.

G. Turnbull asked why in the standard it was not adopted the same classification of the EN779, which was most used from customers. M. Garnett stated that this standard was supposed to take into consideration the ASHRAE filter class (MERV) as well as the HEPA; therefore, the T7, T8 and T9 are intended to merge the requirements from both.

M. Garnett stated that the flow rate has been set to 5000m3/hour. However, this doesn’t prevent the air filtration manufacturers to carry out test at much higher flow rate, as requested by customers. This flow rate was chosen as compromise also with ASHRAE. The final text of the standard will be submitted on 10/05/2021 and it targets to be published by 10/09/2021.

U. Simeoni will check if it is allowed to share with ETN members the draft of the standard. If there will be any comment, this will be discussed during the next teleconference.

**Action:** U. Simeoni to share the updated ISO/29461-1 if allowed

1. **ETN Position Paper – PFHxA restriction proposal**

P. Jackson presented the slides “[*ETN & Kreab – discussion on PFHxA restriction proposal*](https://etn.global/wp-content/uploads/2021/03/ETN-Kreab-Discussion-on-PFHxA-Restriction-Proposal-4-February.pdf)” and stated that the next step of the PFHxA restriction proposal is the submission of the position paper to SEAC (Committee for socio-economic analysis).

The aim of the position paper is to better explain to SEAC the role of the PFHxA in the air filtration industry and its impact on the gas turbine operation.

P. Jackson went through the comments listed in the “[ETN position paper – PFHxA restriction proposal rev20210224](https://etn.global/wp-content/uploads/2021/03/ETN-Position-Paper-PFHxA-restriction-proposal-rev20210224.docx)”, actions were agreed and discussed as following.

U. Simeoni will provide more details on the composition of ETN members.

With regards to market data on EU production and import of gas turbine filters containing C6-treated, M. Garnett stated that this data should mainly be provided by the media manufacturers. M. van Zijp asked if Gore’s filters, largely used in Shell, are also affected by this regulation. B. Weed confirmed that Gore’s filters don’t use C6 material. M. van Zijp suggested to make an overview with a list of filters that use C6 or alternatively a table with the manufacturing processes that include the use of C6.

However, it was clarified that the impact of the filters on the gas turbine’s performances is not straight forward as it depends on several parameters, such as environmental conditions and/or filters stages.

M. Garnett stated that some information on the manufacturing processes are only accessible to the media manufacturers and thus Kreab should have more information on this.

D. Iggander will follow up internally provide further information on the functionality of the C6.

Regarding the description of “challenging environments”, U. Simeoni suggested to use the description drafted by ETN members for the ETN water/salt test procedure.

With regards to providing quantitative data on the GHG emissions reductions, it was highlighted that data on the installed filters are needed. U. Simeoni suggested to provide only an example of GHG emissions with and without C6 filter. M. van Zijp state that it may be difficult to quantify the reduction, but we can indicate the consequences and show a qualitative graph.

G. de Arcangelis suggested to create a table in which manufacturers provide the percentage of the filters with C6 for different markets (e.g. power generation, oil&gas). It was agreed that filters manufacturers will provide the information to ETN, who will treat them as confidential.

It was stated that the new standards have a 3 years development programme.

With regards to how the filters are used at the end of life, M. van Zijp will reach out to experts internally and provide some information.

D. Iggander will follow up internally on glue repellence characteristics.

With regards to the transition from C8 to C6, air filters manufacturers will ask for information internally.

P. Jackson will retrieve information on re-qualification/re-certification steps for gas turbines.

**Action:** U. Simeoni to send a questionnaire to members in order to retrieve information on the filters containing C6.

**Action:** U. Simeoni to discuss with Kreab the information on filters containing C6.

**Action:** D. Iggander to provide information on the functionality of the C6.

**Action:** U. Simeoni to use the description of the Water/salt test procedure in the ETN position paper.

**Action:** G. de Arcangelis to draft a table to be shared with filters manufacturers.

**Action:** M. van Zijp to share a qualitative graph correlating GHG emission reduction and filters’ performances.

**Action:** M. van Zijp to provide info on how filters are used at the end of life.

**Action:** D. Iggander to provide more information on glue repellence characteristics.

**Action:** P. Jackson to retrieve info on re-qualification/re-certification steps for gas turbines.

1. **ISO29461-4 - Test methods for static filter systems in marine and offshore environments**

D. Iggander stated that during the ISO/TC 142 meetings on 2-4 December 2020 the ETN water/salt procedure was presented. Most of the comments received were positive; however, some concerns have been raised on the repetitiveness of the test results, therefore implying more tests are needed. The ISO/TC142 nominated D. Iggander as project coordinator for the NWI.

D. Iggander stated that the first two actions to be taken would be to carry out additional tests and convert the ETN water/salt procedure in an ISO document.

It was agreed to organise an ETN Air Filtration Core Team teleconference, following the results of the voting procedure, in order to discuss how to move forward.

D. Orhon stated that during the ISO’s meeting most of the members were in favour to the open of the NWI, therefore it is expected a positive outcome of the voting procedure.

**Action:** U. Simeoni to communicate the results of the voting procedure on the ISO29461-4.

**Annex I: Action list**

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| **Action Owner** | **Description** | **Deadline date** |
| U. Simeoni | U. Simeoni to share the updated ISO/29461-1 if allowed | 19 March 2021 |
| U. Simeoni | to send a questionnaire to members in order to retrieve information on the filters containing C6. | 19 March 2021 |
| U. Simeoni | to discuss with Kreab the information on filters containing C6. | 19 March 2021 |
| D. Iggander | to provide information on the functionality of the C6. | 26 March 2021 |
| U. Simeoni | to use the description of the Water/salt test procedure in the ETN position paper. | 26 March 2021 |
| G. de Arcangelis | to draft a table on C6 GT market analysis to be shared with filters manufacturers. | 02 March 2021 |
| Filters manufacturers | To provide information on the C6 GT market analysis | 26 March 2021 |
| M. van Zijp | to share a qualitative graph correlating GHG emission reduction and filters’ performances. | 26 March 2021 |
| M. van Zijp | to provide info on how filters are used at the end of life. | 26 March 2021 |
| D. Iggander | to provide more information on glue repellence characteristics. | 26 March 2021 |
| P. Jackson | to retrieve info on re-qualification/re-certification steps for gas turbines. | 26 March 2021 |
| U. Simeoni | to communicate the results of the voting procedure on the ISO29461-4. | 26 March 2021 |