



ETN Global October Workshop

“Driving sustainable pathways forward”
08-10 October 2024, Stuttgart, Germany

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Report from the Chairs on takeaways/actions

Digital solutions and diagnostics

Takeaways/Actions

- Problem definition
- What ETN can do
 - Identify the State of the Art
 - Share information
 - Standardise gathering of engineering data specifically for gas turbines
- Actions:
 - Completed training/sharing: Woodward, Cranfield, Endesa
 - Webinar series: expected start November
 - Best practices report

We welcome further involvement in the Working Group: gt@etn.global

Decentralised Energy Systems

Takeaways/Actions

- Takeaways:
 - Shedding light in the background of expected energy demands including statistics and prediction of future trends (e.g., load factors, LCA)
 - Resilience of the grid and energy system: how can DES can help
 - Identify a standard for flexible GTs; efficiency and emission as function of load

- Activities:
 - Training on LCA tool
 - Providing positive examples for integrated decentralised energy systems including local energy storage

CCS

Takeaways/actions

Takeaways (from the Q&A)

- CAPEX, flexibility, and intermittency (capture rate) major barriers to CCS development
- Social acceptance highly dependant on the affordability for consumers (business case)
- Lack of government strategies and, in some cases (BE, GER, IT) also lack of subsidies
- Need for increasing carbon tax
- Urgency to accelerate permitting processes

Actions (2025 activities):

- Further ETN activities should cover CCS-EGR in 2025 (Task force to discuss)
- Draft Report on the CCS optimal transportation methods to be presented at the AGM '25

Lifetime Assessment and Extension

Takeaways/Actions

- HGP cyclic impact and life time extension report is in progress (expected to be finished Q1 2025)
- TMF impact & TBC life literature review appears of interest
- The WG is ready to dive into the next step (setting up industrial project of lifing and extension)
- Ansaldo rotor life program was presented and showed an interesting approach to extend rotor life beyond initial design limits

Air Filtration

Takeaways/Actions

- ISO Standard: ISO 29461-4:
 - A FDIS document should be created based on the WG9 meeting conclusions and is intended to be ready at the beginning of November 2024. The limit date for the ISO 29461-4 is December 3.
 - Core group to meet ASAP to decide actions and finalise (based on the October 8th ISO meeting outcomes)
- Report Best practice on intake maintenance:
 - Kick-off the activity online in November
 - Have an in-person meeting in January
- ETN Standard: hydrocarbon/soot effect on filter performance
 - AAF to introduce the topic in the November Online meeting
 - Actions to be discussed in the in-person meeting in January

Supercritical CO₂

Actions

Problem statement	Proposed activities
Construct a large demonstrator in Europe (MW-scale)	<ul style="list-style-type: none">• Set up a case to be presented to funding institutions• Align member states to work together on this platform• Gather industry-support/commitment to work together to advance the technology (master lines for IP sharing)
Market uptake in various applications	<ul style="list-style-type: none">• Assess viability of sCO₂ power plant for grid services (YEC project)• CAPEX estimation for an sCO₂ offshore application• Set up a consistent/reliable cost database using anonymised cost figures, including maintenance impact, to perform TCO evaluations
System integration	<ul style="list-style-type: none">• Integration and operation of sCO₂ systems, including BoP• Front-End Engineering of a reference power plant (need to choose between Waste Heat Recovery, CSP and Nuclear)

Supercritical CO₂

Takeaways

Which of these planned activities deserves the most attention?

1. Construction of a large demonstrator in Europe
2. Assessment of Market uptake in various applications
3. System integration

What are the gaps that we don't see being addressed by the STEP facility?








Hydrogen and other alternative fuels

Actions and takeaways

- Clear definition of "**hydrogen/low-carbon-ready**"
- **Uncertainty** what needs to be considered for **Retrofit**
- **Flexibility** of gas turbine power plants

Please rank the 2025 activities in order of your preferences

1. Viable business cases

2. Transition to a capacity driven market

3. Decentralisation vs. Central power production

4. Urgency & Positioning

5. Use of hydro-treated vegetable oil in existing GTs


Additive Manufacturing

Takeaways and actions

Takeaways

Strong interest of Additive Manufacturing WG in:

- Combining turbine materials, monitoring techniques and inspection capabilities, while printing turbomachinery components.
- In the long-term, need to ensure Quality from the first to the last layer, so that the part can be produced without any Quality issues.

Actions

An Additive Manufacturing WG general meeting will be organised by November to prioritise the next project.

Closing remarks

Christer Björkqvist, Managing Director,
ETN Global

ETN Global 2025 events

Save the dates!

- **AGM & Workshop:** 25-27 March 2025, Bergen, Norway, hosted by Equinor with visits to TCM and Northern Lights Project facilities
- **LM-2500 User Group Meeting:** 3-5 June 2025
- **High-Level User Meeting:** 6 October 2025, Brussels, Belgium
- **12th International Gas Turbine Conference:** 7-8 October 2025, Brussels, Belgium
- **US High-Level User Meeting:** 18 November 2025, Houston, Texas, USA
- **SGT-A35 User Group Meeting:** November 2025 (exact date TBC)
- **Frame 5, 6B, 7E & 9E User Group Meeting:** November 2025 (exact date TBC)

Upcoming info sharing

ETN Global

- **Advanced notification:** 2025 sponsorship and expo opportunities with ETN Global
- **Call for Papers for IGTC-25:** to be announced by 18 October
- **October Workshop 2024:** presentations in PDF to be uploaded on the event webpage by 18 October

Legacy Guardian Award

Practical information

- Visit to DLR: please meet your guide Andreas Huber from DLR in the Foyer of the hotel – he will take the group by public transport.
- Please leave your badges in the box on the registration desk on the top of the stairs.
- Thank you very much and have a safe trip!