Hot section degradation and integrity					
WG Name	LTA/LTE	**Chair**	Siavash Pahlavanyali (RINA Tech UK)	**Co-chair**	Luc Gooren (Engie)
Project lead	Siavash Pahlavanyali (RINA Tech UK)				
Core team	Luc Gooren (Engie); Lulian Papuc (Total); Luca Forno (EthosEnergy); Rene Viggen (ETN); Siavash Pahlavanyali (RINA Tech UK)				
ETN officer	Nicolò Cairo				

Initiative description

Scope definition

To be included.

Objective setting

- To perform a comprehensive review of the impact of gas turbine operation on the integrity of hot gas parts
- To develop a guideline document for the life extension of turbine blades with high cyclic loads

Expected outcome

- Understanding the impact of flexible operation on the integrity of the parts
- Improve the inspection and repair of hot section parts for units with extended cyclic loading
- Identify improvements/modifications that improve the part life/extend the TBO cycle

Implementation of the activities

Project execution

A core team will be established to define the set-up of the paper

To execute the work for various tasks: Participation by various experts from the plant owners, Operation & Maintenance (O&M), academia, research centres and service providers (including OEMs)

Project finances

Expected financing by the owners and service providers of the plants

Meeting schedule and dissemination

- Presentation at AGM /workshops
- Publishing final report in physical form and on the website
- Various updates in ETN MNL and QNL

Deliverables & Milestones

Deliverable 1	Presentation at workshop Stuttgart 2024	**Timing**	xx-10-2024
To update members on the impact of the GT operation on the cycling life of the components			
Deliverable 2	A review report of the effect of flexible operation on the integrity of hot section parts	**Timing**	01-12-2024
Explain briefly. It will provide a review of the fundamentals of cyclic related damage mechanisms on materials degradation, specifically areas such as the crack initiation and propagation, materials behaviour, and in line to what have been found on the parts removed from the turbines with such operational regime. Then inspection and repairs options are discussed to assess and extend the life of the components.			
Milestone 1	Project initiation	**Start date**	01-03-2024
Issue one-pager to define the scope and project.			
Milestone 2	Project execution	**End date**	01-04-2024
Milestone 3	Project end	**End date**	31-12-2024
Explain briefly. An in depth understanding of the available knowledges (and practices) on the effect of the cyclic operation on the integrity and lifetime of the hot gas parts will be developed which might lead to a reliable life time extension of the parts. However, this document may equally explain some immediate requirements for further research and development on full filling the gaps.			