Outcome of High-Level User Meeting 2020

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ETN's High-Level User Meeting 2020

"Operational optimisation and technology development needs for the transition to a carbon-neutral society"

Key messages from ETN Users

- ***The decarbonization trend has accelerated and it is a key priority for all ETN Users requiring high efficiency and low-carbon fuel flexibility towards 2030***
- ***Ambitious decarbonization targets are adopted or in the process of being adopted by ETN Users corporate strategies with different target time horizons ranging from 2030 to 2050 to achieve carbon neutrality***
- ***Many decarbonization options (ranging from partial decarbonization to full decarbonization) for gas turbines are possible, but viability will depend on different local application factors, technical barriers and regulatory framework.***
- ***Hydrogen is perceived as a potential key decarbonisation enabler which would require adaptations ranging from 0 to 100 vol.% towards 2030***
- ***ETN Users believe that gas turbines are playing a key role today, gaining relevance in the coming years as other dispatchable technologies are phased out (e.g. coal and nuclear in different countries), with reliability, operational competitiveness, digitalization and emissions reductions as key drivers.***
- ***ETN Users strongly believe that gas turbines will have an important role in the energy transition, and that turbine-based solutions are a cornerstone technology in the decarbonization of the energy system***
- ***The above requires coordinated intervention and collaboration between the different actors to shape the regulatory framework to secure sustainable long-term future of the gas turbine industry.***

Users call OEMs and the R&D community to join forces, contribute and continue enabling cost-efficient operations of the current asset base, while investing in solutions to respond to the decarbonization challenge

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"Operational optimisation and technology development needs for the transition to a carbon-neutral society"

Vision for the Energy Transition

Decarbonisation
Improve the carbon footprint of new and existing assets towards carbon-free generation

Energy Efficiency
Explore new and more efficient options

Transition to new energy systems
Expand the solutions portfolio in the transition to new energy systems

Strategic Areas and Goals

Sectors collaboration for the development of decarbonised and affordable gas turbine-based solutions

Fleet improvements towards the most efficient and cost-effective solutions for the energy system

System integration providing security of supply and decarbonisation through expanded fuel flexibility

Current Assets Needs and Requirements

Energy Efficiency Improvements
Existing assets upgrades and new assets
Full and part load operation
Increase overhaul service options
Offshore OCGT to CCGT transition
Light and compact bottoming cycles

System transition
Advanced Cycles
Large demonstration project

Emissions
NOx monitoring
NOx emissions with alternative fuels

Decarbonization
Carbon footprint measurements
Large scale CC(U)S
Operation with decarbonised fuels (hydrogen, ammonia, biofuels)
Flaring reduction

Reliability
Maintain availability and performance

Competitiveness
CAPEX optimisation to support new investments
Low OPEX models
Affordable overhaul options
Short term overfiring for peak power
Economic viability of solutions

Key Enablers

Hydrogen
Short-term retrofit to 20-30 vol.%
2030 target to 0-100 vol.%
Local, small scale (<100MW), intermittent power
Cooperation with TSOs and DSOs on infrastructure

Advanced Cycles
sCO2
GT hybridization with decarbonized fuels, batteries, thermal storage
Standard package solutions

Servicing
Depot quality, diversity and capacity
Healthy competition
Lifecycle assessment

Workforce
Develop and retain existing skills
Attract new talents

Policy and Regulatory
Market mechanism to reward transition
System actors collaboration (TSO, DSO)
Legislation
Certification

Digitalisation
Unmanned plants
Data analysis
Remote monitoring

Additive Manufacturing
Product quality & Control

Next Steps and actions

1. Internal review process

- Provide feedback to ETN Members
- Review Users input in the ETN Project Board and explore research and demonstration needs
- Address urgent topics and attribute actions within ETN Working Groups

2. The Project Board to update ETN's R&D Report

- Explore and identify promising solutions
- Review research and demonstration needs

3. The Board to revise ETN's strategy and activities

4. Dissemination & Implementation

- Pave the way for research and demonstration opportunities
- ETN activities and Working Groups

5. Collaboration on common goals and projects