

TC4 Workshop

Implications of introducing 5% to 30% hydrogen into the grid

19th March 2021

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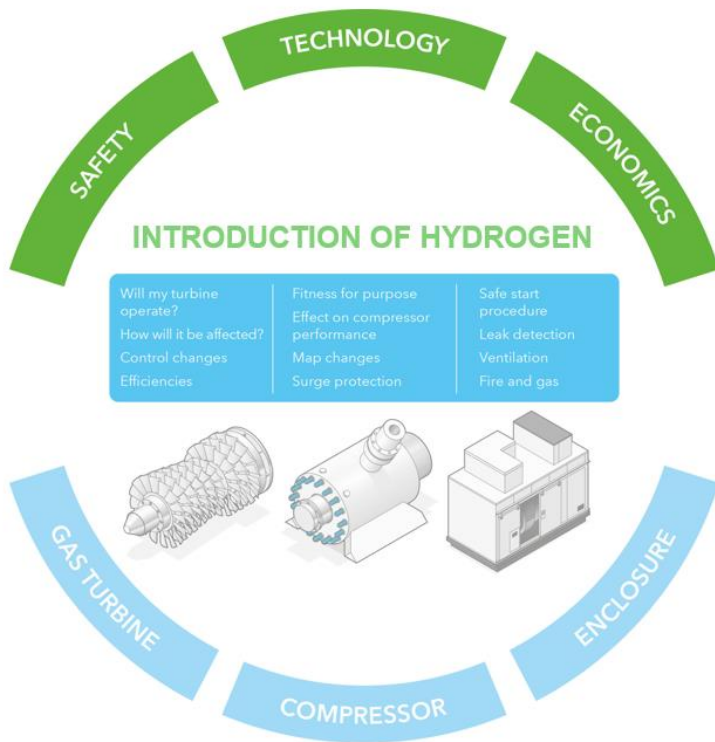
Introduction

June 2020 AGM workshop TC4 presentations recap

- Safety Requirements for Hydrogen Gas turbines – Baker Hughes
 - Leaks and ignitions when compared to other fuels, Leak dispersal and ventilation, ignition effects
- Hydrogen fuel Safety – Solar Turbines
 - Highlighted areas of concern
 - Fire and gas detection, fuel system, electrical devices, control system software, ventilation, gas compressor seal system, exhaust system, starting procedures
- Requirements for retrofitting and for new-build hydrogen ready GT-power plants – Siemens energy
 - Overlooked Hydrogen energy centre Pilot Demo project
 - Considered, consequences of co firing, the approach and considerations, piping, temperature, fuel gas, GT and HRSG
- Hydrogen injection into UK NTS – DNV
 - Review of the UK Hydrogen projects, described what a Hydrogen network may look like, impact of increasing % hydrogen on energy and flow. Case study overview.

AGM-20 TC4 presentations available on ETN website: <https://etn.global/events/agm20/>

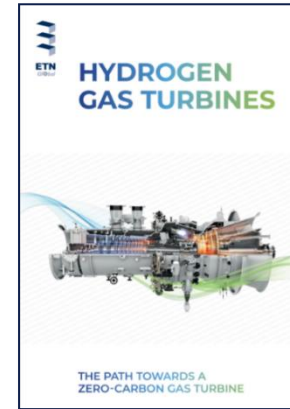
Some considerations for discussion



- Step forward from UK perspective
- Ofgem gives green light to £12.7m hydrogen trial project
 - hydrogen research facility to understand how transmission assets could be used to transport hydrogen in the future to heat homes and deliver green energy to industry
- Ofgem showing their commitment to decarbonising the energy sector.

Presentations

- Hydrogen operation assessment, Tom Kavanagh - Uniper
- Hydrogen Usage in Gas Turbines – Impact on Enclosure Safety, Irfan Siddiqui – Frazer Nash
- Technology aspect, Marc Vignal – Solar Turbines



Panel Sessions Questions from previous TC sessions

Questions from Previous TC sessions:

- What are the limits for starting a GT with hydrogen/NG blend fuel, the examples mentioned starting on NG then switching?
- Are there any safety standards or HSE requirements for operating with hydrogen?
- Consideration for HRSG corrosion?