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# Hydrogen capability

SGT-600, SGT-700 and SGT-800 (DLE burner)

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## Background

- Gas turbines have an important role to play in the energy transition by ensuring a reliable power supply and by decarbonizing energy production through operation on low-carbon fuels such as hydrogen-rich fuels
- Hydrogen sources include refinery/industry process by-products and production via electrolysis from renewable electricity or steam methane reforming from natural gas with carbon capture
- Siemens Energy can support customers in transitioning to a more sustainable future. Based on our innovative technologies, Siemens Energy gas turbines can already operate on fuel with a wide range of hydrogen content

## Fleet applicability and capability

This service product is available for gas turbines which are equipped with 3rd generation DLE burners: i.e. all SGT-700s and SGT-800s as well as newer SGT-600s*

Currently released capabilities:

- SGT-600 → 75 vol-% $H_2$
- SGT-700 → 75 vol-% $H_2$
- SGT-800 → 75 vol-% $H_2$

*) Modification to upgrade older SGT-600s to 3rd gen DLE is also available.

## Product Overview

The key principles behind this newly launched Service product are as follows:

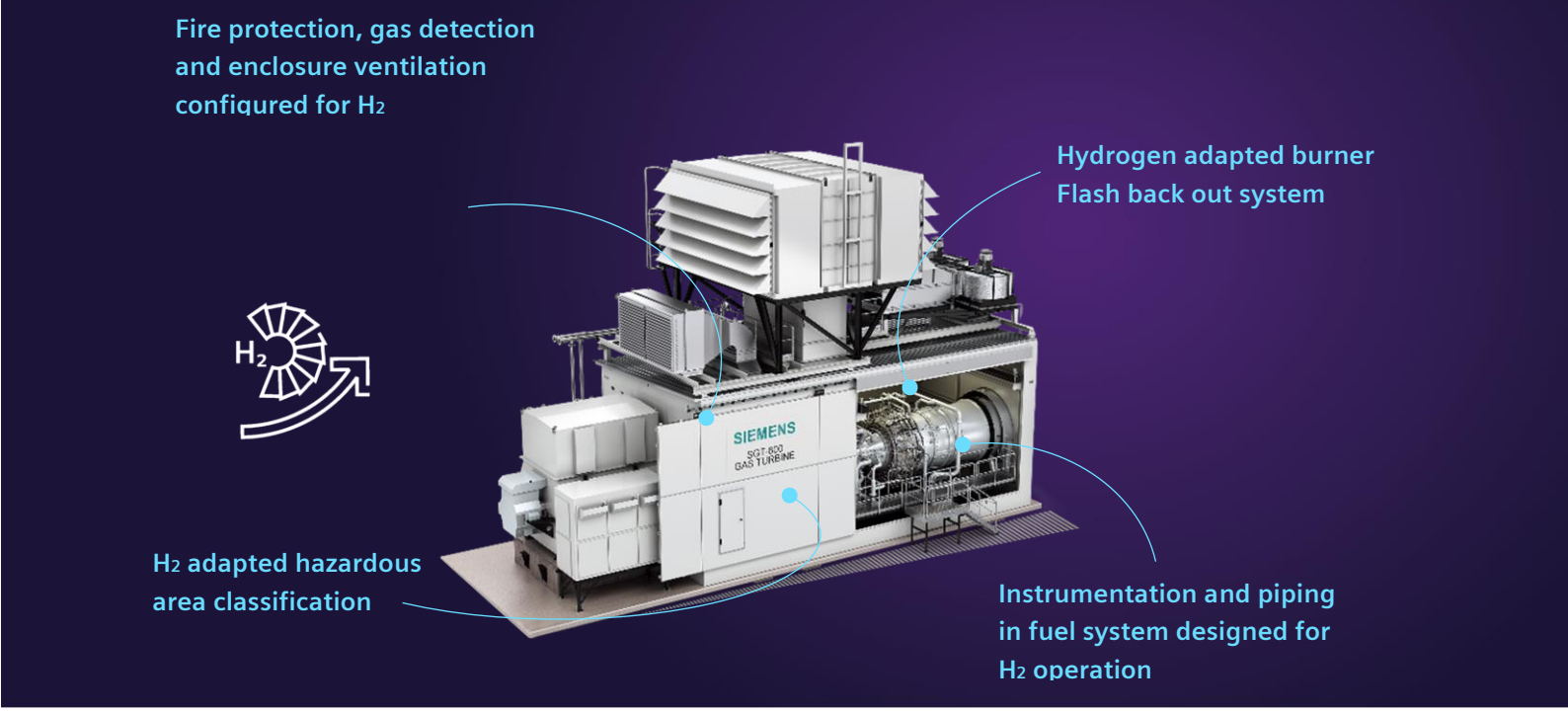
- The solution is built on an evolutionary improvement by steady increase of $H_2$-capabilities based on the unique 3rd generation DLE (Dry Low Emission) burner design
- Modification package is optimized to customer installation and required level of $H_2$ (Stepwise scope increase up to 75 vol-%)
- Minimal disruption to operation, especially if performed together with an inspection
- No or only minor additions to the maintenance program required

## Scope definition

To define the modification scope, the following boundary conditions must be clarified:

- Amount of hydrogen desired to be blended with existing fuel (higher amounts will increase the scope)
- Constituents of the fuel to be used together with the hydrogen
- Emission regulations that need to be fulfilled
- Estimated operating profile
- Design of existing installation of auxiliary equipment and control system
- Currently installed version combustion chamber and burners

## Modification package optimized to customer installation and required level of $H_2$




# Benefits

The key benefits associated with this new service are as follows:

- Meet market sustainability expectations and requirements
- Reduced carbon cost (expected to increase steeply in line with commitments regarding decarbonization)
- Utilization of available off-gas from, for example, a refinery or chemical plant and saving on natural gas
- Storage of excess renewable energy as $H_2$ for use at a time where power demand is higher, usually referred to as Power-2-X. The benefits are both environmental and economical

Interested in how much $CO_2$ you can save and which amounts of hydrogen you need. Try out our Hydrogen Decarbonization Calculator.

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