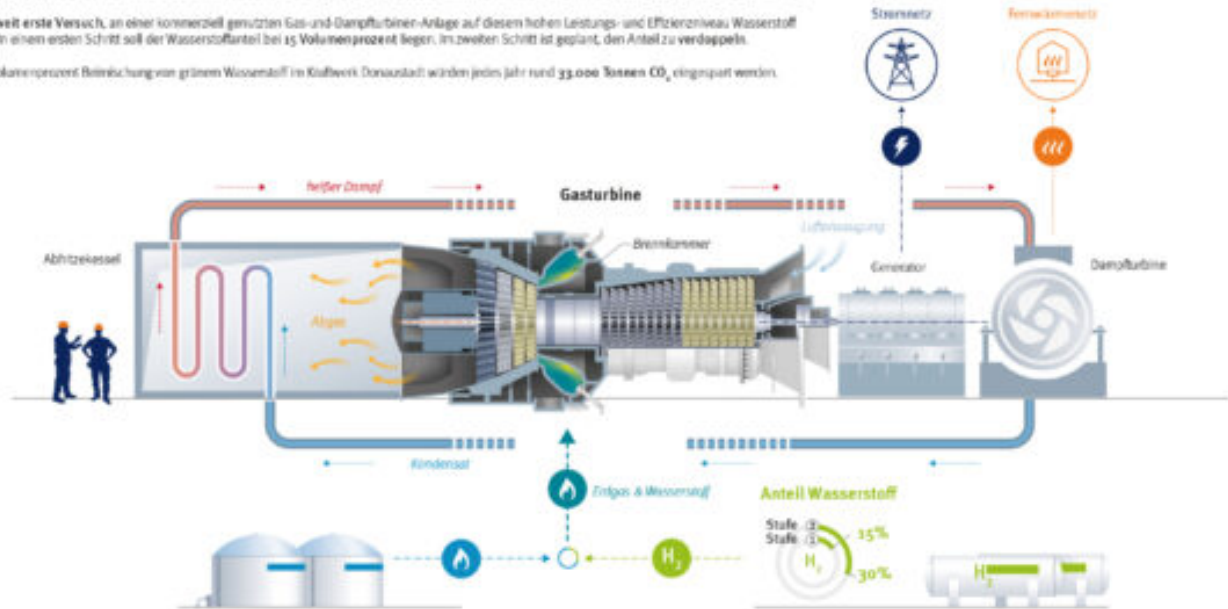


Wasserstoff ist ein entscheidender Energieträger in einer CO₂-neutralen Energiekette. Wien Energie, RheisEnergie, Siemens Energy und VERBUND forschen deshalb an einer neuen Einsatzmöglichkeit. In einem gemeinsamen Betriebsversuch in einer Kraft-Wärme-Kopplungsanlage von Wien Energie, dem Kraftwerk Donaustadt, soll Wasserstoff unter Realbedingungen zum Einsatz kommen. Der umweltfreundliche Energieträger wird dabei dem normalerweise eingesetzten Energieträger Erdgas beigemischt.

Es ist der weltweit erste Versuch, an einer kommerziell genutzten Gas- und Dampfturbinen-Anlage auf diesem hohen Leistungs- und Effizienzniveau Wasserstoff beizumischen. In einem ersten Schritt soll der Wasserstoffanteil bei 15 Volumenprozent liegen. Im zweiten Schritt ist geplant, den Anteil zu verdoppeln.

Schon bei 15 Volumenprozent Betriebsung von grünem Wasserstoff im Kraftwerk Donaustadt würden jedes Jahr rund 33.000 Tonnen CO₂ eingespart werden.



HYDROGEN OPERATING TEST OF A GAS TURBINE IN VIENNA AUSTRIA

Hydrogen is to be used under real conditions in an operational trial at a Wien Energie combined heat and power plant, the Donaustadt power station. The environmentally friendly energy carrier will be mixed with the normally used energy carrier natural gas. This is the world's first attempt to add hydrogen to a large gas and steam turbine plant in public production. In the first step, the proportion of hydrogen is to be 15 percent by volume; in a second step, it is planned to double the proportion. If the trial is successful, the plant will be certified for continuous operation. Even with 15 percent by volume of green hydrogen, around 33,000 tonnes of CO₂ will be saved each year.

2022, Wien Energie worked with Siemens Energy to modify the gas turbine and prepare it for operational testing. As part of the conversion work, improved turbine blades, a new combustion system, a fuel gas analyser and a new control system were installed. The combustion chamber was optimised and prepared for the operational test. The operational trial has been running since mid-July 2023, and the project partners can already report the first interim successes: The hydrogen content in gas turbine operation could already be increased to 15 percent by volume on individual test days. The goal is to certify these gas turbines for the admixture of up to 15 percent hydrogen by volume in regular operation. In a follow-up project, it is planned to increase the hydrogen share to around 30 percent by volume.

On behalf of Wien Energie, movingpower GmbH is responsible for general coordination and technical construction supervision.

