

A large industrial facility, likely a power plant or refinery, with multiple tall towers and complex piping. The NEM logo is visible on several parts of the structure. The sky is blue with some clouds.

# Upgrading Operations

Towards a faster  
energy transition

**nem**  
BALCKE DÜRR

## A lifetime of service

**Operating and maintaining a power plant is challenging. At NEM, we are dedicated to supporting our customers during the complete lifetime of the plant. No matter what stage of the plant's lifetime, NEM offers service from spare parts to complete refurbishments, from engineering & consultancy to inspection services towards long term service agreements.**

These agreements focus on safeguarding the integrity of the installation where we carefully plan ahead inspections and service moments. As Original Equipment Manufacturer (OEM), we have unique know-how of our products. This unique know-how gives our clients the best service, irrespective whether for installations that have been designed and supplied by NEM or from other OEMs.

## Improving Operations

**Improving operations from base load to fast start and cycling.**

Changing electricity markets and the use of more renewable sources on the grid, impacts the operating regime of Combined Cycle Power Plants and also HRSGs. NEM offers unique fast start and cycling design. NEM's patented **DrumPlus™ design** (NEM HNC+) can also serve as starting point for adapting a traditional HRSG-design. By taking away bottlenecks in the HRSG-system, thermal stresses can be avoided and more flexible operations can be achieved.

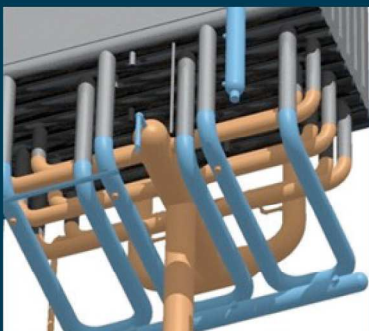
**DrumPlus™ technology adapting the HRSG system**

**DrumPlus™: NEM Energy patented HRSG technology**



Secondary steam separation in bottles outside drum

**Enhancing the system to increase flexibility**



Multiple inside downcomers  
Expansion loops in EVAP feeder  
Bundle spring supported



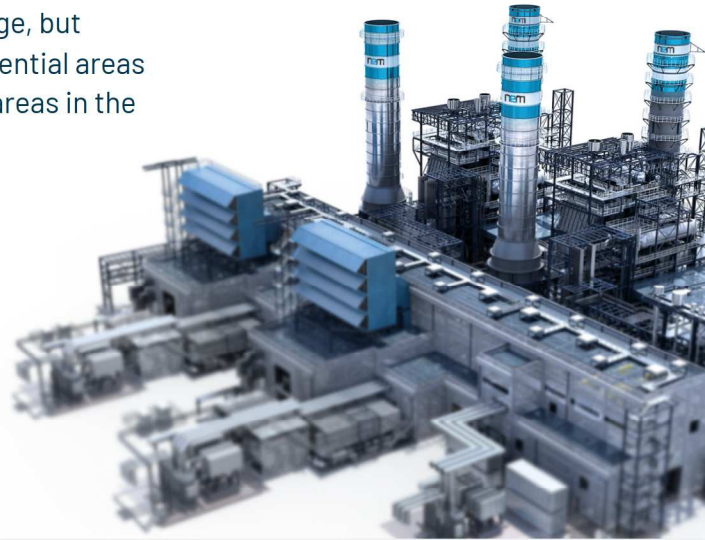
# Moving from natural gas to hydrogen

Hydrogen will be an important part of the future power generation industry.

The **HRSG is impacted** by firing hydrogen in the gas turbine and there are various **challenges to be considered**.

New built HRSGs can be made **Hydrogen-Ready** in the design phase to **minimize impacts** when shifting to Hydrogen in a later stage, but existing installations need to be properly investigated on potential areas of concern. NEM has a good understanding of the impacted areas in the HRSG and complementary equipment as the exhaust gas bypass system.

**NEM offers services to support the Hydrogen roadmap** users of HRSGs and their ambition to move towards the firing of hydrogen, either in the gas turbine or in the HRSG supplementary firing system.



## Emission Control

Carbon dioxide emissions are the subject of discussion, but also NOx emissions are increasingly being regulated. More and more restrictions exist on the parts per million (ppm) allowance by gas turbine-based power plants. NEM offers Selective Catalyst Reduction solutions for both simple cycle gas turbines as for combined cycle power plants. Existing HRSG-installations can be equipped with an SCR system to comply to meet new emission limits. We work with state-of-the-art technology and superior catalyst suppliers, providing a sustainable and cost-effective solution for reducing nitrogen oxide (NOx) emissions.

Improve environmental compliance and contribute to a cleaner future.  
Our team is ready to support you.

## Lifetime extension

Looking at extending your power purchase agreement and run for an additional number of years. Unlock the full potential of your power plant with our cutting-edge lifetime extension solutions. Our expert team is dedicated to enhancing your plant's performance, ensuring it operates at peak efficiency for years to come. By extending the lifespan of your power plant and HRSG, you not only protect your initial investment but also contribute to a more sustainable energy future.



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