

▶ (Left) Klaus Baernthaler, Director Business Development (Right) Martin Koller, Recovery and Power R&D Project Manager



**SPECIMEN**

As a globally-leading supplier of plants, equipment, and services across a vast array of industrial sectors, the Austrian-headquartered ANDRITZ GROUP has also established itself as a pioneering provider of innovative air pollution control technologies. As Daniel Barnes found out when visiting the ANDRITZ stand at SMM 2016, the company's latest developments are geared towards exhaust gas cleaning systems for the maritime industry.

# SHIPPING'S NEW AIR POLLUTION CONTROL

## Professionals

IT wasn't until Martin Koller, Recovery and Power R&D Project Manager at ANDRITZ, began talking about the geography of his homeland that a large chasm between ANDRITZ and the vast majority of the companies and individuals at SMM 2016 became apparent.

"Both the company and I are Austrian. As Austria is a landlocked country, this makes it a little difficult for us to step into the maritime market," he smiled. "Austria has no maritime shipping, but we do have the technologies, and our group has a global set-up."

Martin Koller was referring to the decision by the ANDRITZ GROUP to transfer some of the vast knowledge, engineering, and project know-how of this more than 25,000-employee, 250-plus location organisation to a shipping sector soon to see stricter emission controls.

Ships trading in the Baltic and North Sea areas, off the North American coast, and around the Caribbean Sea have all been operating in emission control areas (ECAs) where mandatory limits on emissions of sulfur oxides (SOx) and nitrogen oxides (NOx) have been in place since 2015.

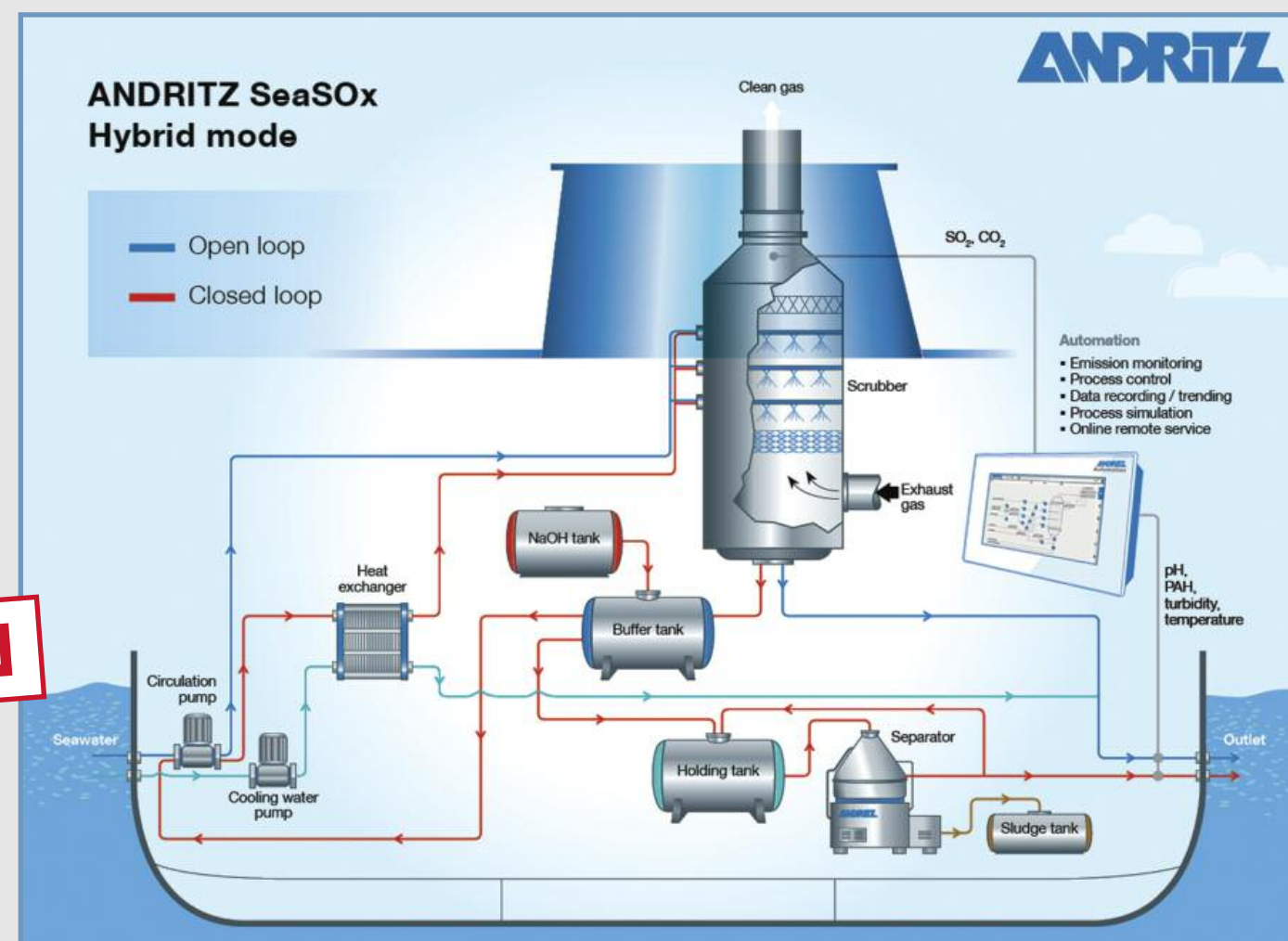
As the IMO outlines within Annex VI of the MARPOL Convention, ships within the ECAs must report the use of fuel oil with a sulfur content of more than 0.1 per cent. Outside the emission control areas, the current limit for sulfur content of fuel oil is 3.5 per cent, falling to 0.5 per cent in 2020 – a date that will be subject to review in 2018.

### IMO's 2020 Emission Deadline

"With sulfur limits worldwide most probably implemented by 2020, ship owners need to decide by 2018 at the latest whether to install or order emission-reducing products," Martin Koller confirmed.

IMO regulations state that ships may also meet the SOx requirements by using gas as a fuel or an approved equivalent method, for example exhaust gas cleaning systems or "scrubbers", and this is where ANDRITZ can step in.

ANDRITZ has developed the SeaSOx technology, which can be installed on all types of ships, either on a new build or



retrofit basis. The simple and robust design of the ANDRITZ SeaSOx technology has, according to Martin Koller, a number of clear advantages.

"The key equipment in this technology is the advanced ANDRITZ SeaSOx scrubber, which is designed on the basis of more than 30 years of experience in scrubber design and using the most highly developed CFD models to simulate and optimise flow distribution and SOx mass transfer.

"The SeaSOx technology can operate in the open loop mode, where the alkalinity of seawater is used as the washing medium, as well as in the closed loop mode, where the natural alkalinity is too low or discharging of effluent is prohibited and a neutralising agent (NaOH,  $\text{Na}_2\text{CO}_3$ ) has to be added."

The system, which can also work in a hybrid process, ensures a substantial reduction of absorber noise, while exhaust gas can pass through safely, even when the SeaSOx plant is not operating. This technology offers the highest removal efficiencies with lowest operating costs, combining ANDRITZ proprietary FGDplus (flue gas desulphurisation) technology and optimised spray bank design.

### Maritime Partners Wanted!

The system warranted many in-depth conversations from interested parties during the four days of SMM.

"The scrubber that ANDRITZ offers is not a new technology – we are very familiar with it and have numerous proven air pollution control references worldwide. There are no limits – SeaSOx is a possibility for every type of ship. Our system can be designed so that the scrubber is either rectangular, square or round. The square design fits best in ships with smaller or wider funnels.

"Importantly, the overall footprint of the system is small, which could be beneficial for cruise ships where there is much less space available as opposed to tankers, for instance. It means that some of these design points could be beneficial for certain ships."

### Trust in ANDRITZ

With ANDRITZ's long-term air pollution control know-how and installations around the globe, and a global research and development collaboration that links a network of recognised partners and universities, Martin Koller's message to the shipping industry is simple: "Trust ANDRITZ technology because we provide high quality and will be a competent, and reliable partner – this is our company philosophy.

"We know our business and we have the right background in all kinds of components installed in this system because we are the OEM for most of them. We can provide worldwide service because we have locations in all parts of the world."

