

## **The challenges of delivering a cleaner fuel to shipping**

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Mr. Tapan Panda is an Extra Master and member of CMMI. He is Ex- Rajendra 1986 and belongs to (1986-1988) batch. In 1996, he cleared Master F.G Exam and sailed as Master in various shipping companies like Anglo-Eastern Ship Management Co. Ltd. and Mitsui OSK Lines, Japan etc. In 2002, his passion towards teaching led him to join Massa Maritime Academy, Belapur, Navi Mumbai till 2007. In 2007, he joined BSM Maritime Training Centre (BSM MTC), India as Nautical Training Superintendent. At present he is in charge of LPG & LNG Courses and has been conducting LICOS training for Shell Nakilat fleet, Honeywell, BW Maritime, Dyna Gas, Chevron, K-line, LNG Petronet etc. for last 10 years. He also conducts various Navigational and soft skill training at BSM MTC. He is also author of 5 text books for various Nautical Grades of Certificate of Competency namely Cargo Handling & Stowage, Chartwork & Navigation, Ship Stability, ECDIS & NAVIGATION, Maritime Convention, Maritime Law and Shipping Management.

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### **Abstract:**

Stringent regulations restrict fuel choice in Emission Control Areas. These strict limits on Sulphur Oxides (SO<sub>x</sub>) and Particulate Matter (PM) from marine bunkers will increase globally during the next five years, accelerating the move to different types of fuel. For all ships trading to Europe, the Monitoring, Reporting and Verification (MRV) regulations covering carbon dioxide emissions entered force on 1st January 2018. The new IMO global sulphur cap of 0.5% applies from 2020. New equipment and infrastructure will be needed in all major bunkering hubs. Major bunkering hubs are already considering how to address the needs of Liquefied Natural Gas (LNG) fuelling and the infrastructure required. The number of ships being built to use LNG, a cleaner-burning carbon fuel, is increasing. This covers many sectors, including cruise, ferry, container, tanker and bulk carrier.

As a leading maritime solutions provider, Bernhard Schulte Shipmanagement (BSM), in conjunction with our partners Babcock International, have developed a key component in the LNG bunker delivery chain, the Gas Supply Vessel (GSV) – see attached images. This ship is designed to supply LNG to other ships and shore facilities on a regional basis as natural gas fuelling develops. This process requires stringent risk assessment and the ability to develop operational practices new to the existing LNG sector, such as simultaneous operations and delivering fuel to different customers in multiple locations.