CASE STUDY

LNG BUNKERING INFRASTRUCTURE: GAS4SEA'S ENGIE ZEEBRUGGE LNG BUNKER VESSEL

MEETING FIRST MOVER CHALLENGES

SUMMARY

The ENGIE Zeebrugge LNG bunker vessel case study illustrates the first mover challenges Gas4Sea needed to address to develop LNG bunkering services in North West Europe. These included the design of the bunkering vessel, absence of relevant regulation, the need to create customer confidence, and the lack of understanding in the shipping industry of LNG as a marine fuel. Overcoming these challenges required close collaboration with a variety of stakeholders.

THE CASE STUDY

Introducing the Gas4Sea ENGIE Zeebrugge case study

The ENGIE Zeebrugge was the world's first purpose-built LNG bunkering vessel and represents the Gas4Sea partnership's first investment in LNG bunkering infrastructure.

The bunker vessel contract was signed with the shipyard in June 2014 and the vessel was delivered to ENGIE, Fluxys, Mitsubishi Corporation and NYK Line in February of 2017. It has been designed to deliver LNG to a wide range of customers at the Belgian port of Zeebrugge, as well as other nearby ports.

First deliveries of LNG were made at the Port of Zeebrugge to the M/V AUTO ECO and M/V AUTO ENERGY, United European Car Carriers' (UECC) two new gas-propelled pure car and truck carriers (PCTCs) in 1H 2017. The ENGIE Zeebrugge loads LNG at Fluxys' LNG terminal in Zeebrugge, where small carriers with capacities from 2,000 cum upwards can dock at the second jetty which was commissioned in January 2017.

GAS4SEA – A COMPLEMENTARY PARTNERSHIP

The Gas4Sea partnership was established in 2014 by ENGIE, Mitsubishi Corporation, and NYK Line to develop global LNG bunkering services. The partners had complementary activities, capabilities and global operations and were aligned on the opportunity presented by LNG bunkering and their ambition to be a first mover.

The partners' vision for the Zeebrugge project was threefold. First, to establish the business case for LNG as marine fuel with a reliable anchor customer and in a market where the partners would be able to capitalize on their existing value chain participation and track record. Second, to present LNG as a viable fuelling solution for the shipping industry, supported by a live business model and real activities. And third, develop a LNG fuel supply chain based on healthy economics for every stakeholder in the project.

Gas4Sea also recognised early on, the need to be able to provide a 'universal' bunkering service to customers. Shipping lines do not necessarily have fixed trading routes – some operate tramp service and even cruise lines may change their routes from time to time.

NORTH WEST EUROPE – AN OBVIOUS LOCATION TO BEGIN

North West Europe was an obvious starting point for the partnership - an ECA zone was already in place; ENGIE already had a position there because

of its interest in the Zeebrugge LNG regasification terminal; and NYK had a share in UECC which was building two LNG-fuelled PCTCs to serve customers in the region.

Gas4Sea was keen to capitalise on being a first mover, gain brand recognition and, through its foothold in Zeebrugge, expand to serve customers in the NWE ECA zone and then globally where it considered strategically important. The partners also recognised the key importance of a strong local partner wherever appropriate to bring market intelligence and relationships to the venture enhancing its integrity to provide added assurance to potential customers. In Zeebrugge this was Fluxys, the Belgian natural gas transmission system operator.

MEETING FIRST MOVER CHALLENGES IN A NEW MARKET

Gas4Sea needed to address a significant number of first mover challenges in delivering the ENGIE Zeebrugge. Key issues included the design of the bunkering vessel, absence of relevant regulation, the need to create customer confidence, and the lack of understanding in the shipping industry of LNG as a marine fuel. Overcoming these challenges required close collaboration with a variety of stakeholders.

FACT BOX:

Bunker vessel:	Name: ENGIE Zeebrugge
Capacity:	Two Type-C cargo tanks, total tank volume, 5,000 cum Max bunkering rate: 600 cum/hr Gross tonnage: 7,403 tons Dimensions: 107.6 m length 18.4 m breadth
Class:	Bureau Veritas
Shipyard	Hanjin Heavy Industries & Construction Co. Ltd., Korea
Commissioned:	June 2017
Ownership:	ENGIE, Fluxys, Mitsubishi Corporation & NYK
Charterer:	Gas4Sea
Home port:	Zeebrugge
	LNG loaded at Fluxys' LNG terminal where small LNG carriers with capacities from 2,000 cum can dock at the recently commissioned second jetty

ENGIE ZEEBRUGGE LNG BUNKERING VESSEL

From a technical perspective each potential customer ship is different depending on the region and the shipping segment. Cruise ships are very different from container and product ships. Therefore, in the early stages of market development the bunker vessel must be able to efficiently accommodate many different types of customers. Further, in June 2014, when the bunker vessel contract was signed there was a lack of technical standards. To address these 'technical' challenges, the Gas4Sea technical team worked closely with the Korean Hanjin Heavy Industries & Construction shipyard and Bureau Veritas, the class society, being careful to distinguish between the must and nice to have features of the vessel.

When the project was first envisaged there was little or no regulation relating to LNG bunkering operations. This meant that Gas4Sea had to work closely with MBZ, the Zeebrugge port authority, ICO the terminal operator, and other related organisations such as the local fire brigade to create regulatory framework, encompassing SIMOPS, from scratch. This was not easy but it was helped by the fact that MBZ was keen to facilitate the project as part of its efforts to compete for new business, in common with other port authorities.

In the early stages of market development potential customers need confidence in supply and there is only one bunker vessel in Zeebrugge. The question that needed answering was what happens if the asset fails? Gas4Sea is trying to have a back-up solution to provide customers with the reassurance they need.

Finally, LNG, its potential as a marine fuel and its availability is not well understood by the shipping industry. Customer education is a high priority for Gas4Sea and a driver for the partners to become members of advocacy organisations such as SEA\LNG.

SEA\LNG LTD
Contact us via:
communications@sea-lng.org
www.sea-lng.org
twitter.com/SEALNGcoalition