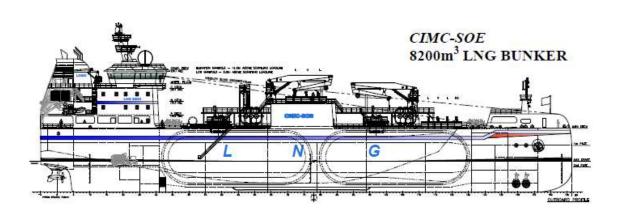
LNG – FORM B





SHELLINGTIME 2

PART II LNG FORM B - PARTICULARS OF VESSEL

(a)	Ship's Name	Alice Cosulich
(b)	Builder and Yard	Nantong CIMC Sinopacific Offshore Engineering Co Ltd
(c)	Hull No.	S1058
(d)	Year Built	2022
(e)	Port of Registry and Flag	Genova – Italy Flag
(f)	IMO Number	9938767
(g)	Call Sign	IBBB
(h)	Classification Society	RINA
(i)	Protection and Indemnity Club	SKULD (TBC)

1. Principal Particulars

(a)	Length overall	113.00m
(b)	Length Between Perpendiculars	109.50m
(c)	Breadth moulded	20.00m
(d)	Depth moulded	13.50m
(e)	Draught at summer freeboard (Extreme)	6.60m
(f)	Height overall — keel to highest fixed point	35.9m
(g)	Maximum air draught (with full ballast and half bunkers) - (corresponding draughts)	24.1m / 5m
(h)	Gross Tonnage (International)	8847 GT
(i)	Net Tonnage (International)	2651MT
(j)	Gross Tonnage (Suez)	To be informed upon delivery - MT
(k)	Net Tonnage (Suez)	To be informed upon delivery - MT
	Net Tonnage (Panama)	To be informed upon delivery - MT
(I)	Light Ship Displacement	MT 4900 Approx
(m)	Displacement (maximum)	10351.7 MT
(n)	Windage in normal ballast conditions: Lateral	412.5m2
	Longitudinal	1670m2
(o)	Classification designation	LNGBV

		Product: LNG
		Maximum pressure: 3.6 barG Minimum pressure: -0.25 barG
(p)	Conditions of Carriage (as defined on Certificate of Fitness):	Minimum temperature: -163 oC Maximum density: 500 kg/m3 for structural analysis, scantling of cargo tank and cargo pump
		Cargo tank to be 98.5 % of the total capacity at the reference temperature.
		113.00m

2. Operating Draught and Deadweight

(a)	Draught filling to 98.5% (@ cargo density 0.47 kg/m3)	6,493 mtrs
(b)	Deadweight filling to 98.5% (@ cargo density 0.47 kg/m3)	MT 5294

3. Ballast System

(a)	Total capacity of ballast water tanks	m3 2361.9
(b)	Number, capacity and head of pumps for handling ballast	n.2 self-priming 150 m3/h each, 0.30 Mpa or 30 MLC
(c)	Is Vessel able to ballast / de-ballast within the cargo loading/discharging period?	YES
(d)	Can the Vessel undertake ballast exchange at sea within 24 hours	Yes BWMS INSTALLED

4. Details of Principal Certification

(List conventions complied with / Certificates obtained, including protocols, amendments and date of issue)

(a)	Load Line	It will be available at delivery
(b)	SOLAS	It will be available at delivery
(c)	IGC Code	It will be available at delivery
(d)	Tonnage	It will be available at delivery
(e)	Marine Pollution (MARPOL)	It will be available at delivery
(f)	I. M. O. Certificate of Fitness	It will be available at delivery
(g)	USCG Certificate of Compliance	N/A
(h)	Independent Sworn Measurer Certificate	N/A
(i)	SIRE Inspection	New building
(j)	Port state control	New building

Is certification held indicating compliance with the following?

(k)	ISPS Code	YES
(1)	Rules and Regulations of Suez Canal Authorities	YES
(m)	ISM	YES

5. Propulsion

Type and make of propulsion plant	SCHOTTEL EcoPeller SRE 360 Z FP
Maximum rated power and RPM	1500KW@1800rpm
Proposed service power and RPM	
Grade of Fuel	DMA as per ISO8217-2010) with 0.1% Sulphu (Viscosity 2~6 cSt/40oC)
Dual Fuel Burning	YES Fuel gas quality The gas has to fulfil requirements as in the table below. Property Unit Limit Lower Heating Value (LHV _V), min. 1) MJ/m²N 2) 26 Methane Number (MN), min. 5) 70 70 Methane (CH ₄) content, min. % v/v 70 Hydrogen sulphide (H ₂ S) content, max. % v/v 0.05 Hydrogen (H ₂) content, max. % v/v 3.0 Liquid phase water and hydrocarbon condensate bef. engine, mg/m²N Not allowed max. 4 Not allowed max. 4 Oil content, max. mg/m²N 2.0 Armonria content, max. mg/m²N 25 Chlorine + Fluorine content, max. mg/m²N 50 Particles or solids content in engine inlet, max. mg/m²N 50 Particles or solids size in engine inlet, max. µm 5
	Proposed service power and RPM Grade of Fuel

6. Speed / Consumption

(a)		Maximum fuel consumption (Tonnes of Fuel Oil Equivalent / day)			
	Speed (Knots)	Laden		Ballast	
	10.5	6.3		6.3	
	11.0	7.1		7.1	
	11.5	8.1		7.9	
	12.0	9.1 10.6		8.9 10.2	
	12.5				
	13.0 12.0			11.2	
	13.5	13.6		12.3	
	14.0	15.7		13.5	
(b)	Trial Speed at Maximun	n Power	To be info	rmed after delivery	
(c)	Service Speed, Laden ar	nd Ballast	13.0 Knots	and 13.0 Knots	
(d)	In Port (cargo operation	ort (cargo operations)		Abt. 3.8 MT per day	
(e)	In Port (idle)		Abt. 2.6 MT per day		
(f)	For Inert Gas Generatio	n	Abt. 3.6 M	IT per day of Gas Oil	

(g)	For Reliquification of the cargo	Abt. 4.9 MT per day of Gas Oil
(h)	For Ballast exchange	Abt. 2.7 For 100% exchange of ballast
		water (TBC)

7. Boilers and Steam Capacity

(a	(a) Number and type of boilers		N/A
(k) Maximum steam output availa	ble	N/A
(c) Normal service output corresponding to 5(b) N/A		N/A	

8. Cargo Tanks

(a)	Number of tanks	2
	Capacity of LNG tanks at 98.5% filling level	m3
	No 1 Tank	4,038.5
 	No 2 Tank	4,305.6
(b)		
	Total	8344.1
	Gross Capacity of LNG tanks at 100%	m3
	No 1 Tank	4,100.0
	No 2 Tank	4,371.2
(c)		
	Total	8471.2
(4)	Partial loading / filling restrictions	No partial loading and no
(d)	Partial loading / filling restrictions	filling restrictions;
		Approx.21 Hours
		(considering start condition
		30 degC and end condition -
(e)	The Vessel's cargo tanks can be cooled down from	140 degC, at cooldown rate is
(6)	ambient in:	8.2 degC/h which is the
		maximum acceptable
		cooldown rate by the cargo
		pump.)
(f)	Maximum filling rate	1500 m3 per hour
(g)	Relief valve settings (MARVS)	3600mb (gauge) (3.6barg)
		Tank No.1: 0.232% of 98% filling ratio per day
(h)	Loaded Boil-Off rate	Tank No.2: 0.228% of 98% filling
		ratio per day
(i)	Ballast Boil-Off rate	Not yet available. Only
('')		contractual BOG rate available.

9. Cargo Discharge

(a)	Number of cargo pumps per tank	2, 1 for each lobe
(b)	Make and type of cargo pumps	Maker: Svanehøj Type: DW 150/150-6-K+I
(c)	Design rated capacity of each cargo pump and corresponding discharge head	Capacity:300 m3/h Head :210 m.l.c
(d)	Number of spray (stripping) pumps per tank	1
(e)	Make and type of spray (stripping) pumps	Maker: Svanehøj Type: EFP 24-4 15/440/60.C70M.L.PN10
(f)	Design rated capacity of each spray pump and corresponding discharge head	Capacity:15 m3/h Head :130 m.l.c
(g)	Number, Make and Capacity of Auxiliary Pumps	Glycol pump Number: 2 sets per ship Maker: PG Flow Solution AS Type:PG - 50/315 A1 Capacity:54 m3/h
(h)	Bulk discharge time (not including start up and stripping periods) — assume head at ship's rail = 80 mlc and no restrictions on vapour return from shore.	7 hours
(i)	LNG STS TANSFER SYSTEM	
	Cargo hose	Dolphinflex White SS composite hose for LNG STS. EN13766 – IMO IGC CODE – EN1474-II
		Details: nr. 1 8" 300 Ansi 25 mtrs nr. 1 6" 150 Ansi 25 mtrs
	Hose supporter and Fall Arrest	KLAW K080SSF005 Quantities: 1 x 8" + 1 x 6"
	ERCS	KLAW KR080 Liquid line 8" KLAW KR060 Liquid line 6"
	QCDC	KLAW DCH080SYRRA2ABZ (8") KLAW DCH060SYRRA2ABZ (6") Tank unit and connections as per ISO 21593
	VSD	KLAW VSD003
	HPU	KLAW EPHPU-4-1-P

10. Cryogenic Systems

(a)	Type of LNG containment system	Туре С
(b)	Design temperature	Min. Temperature: -163 °C
(c)	Make and type of vapour return compressors	Maker: Burckhardt compression Type:2KL90-2D_1
(d)	Number and rated capacity of vapour return compressors and corresponding discharge head	Number: 2 sets per ship Start pressure:1 bara Start temperature: -140°C Discharge pressure: 9 bara Discharge temperature: 76°C Capacity: 360.21 kg/h
(e)	Is a steam dump system provided? If so, is the capacity sufficient to deal with all excess steam generated by the boilers at max designed Boil-Off rate with engines stopped according to Class & USCG Rules?	GCU maker: Saacke GCU type 1002/2007 GCU capacity 500 Sm3/h (100% contractual BOG) Subcooler ready with a maximum guaranteed capacity by the vendor of 0.49 MT/hour with LNG. (128% of contractual BOG)
(f)	Total capacity of liquid nitrogen storage tanks (if nitrogen generator not fitted)	Liquid Nitrogen storage tank not fitted

11. LNG Measurement and Tank Calibration

(a)	Are all tanks calibrated and certified by a qualified agency? (Specify agency)	Yes, all cargo tanks calibrated and certified by SGS
(b)	Make and type of primary system for measuring cargo level, temperature and pressure Level measuring system accuracy and range	Maker: KONGSBERG Type of level measuring system: Radar Tank Gauge GLA-310/5 Accuracy: +/- 5 mm Range: 0~20 m
	Temperature measuring system accuracy and range Pressure measuring system accuracy and range	Type of temperature measuring system: Temp. sensor LNG/LPG-MN-3927 Accuracy: -165°C to -145°C: +/-0,2°C -145°C to -120°C: +/-0,3°C -120°C to +40°C: +/- 1,5°C
		Range: -196~400°C Type of Pressure measuring system: E+H PMC71 Accuracy: ±0.5% Range: 0~6 bara
	Gas Chromatograph	EMERSON 370X1 – IEC-604-3-HE-W-R. Component/range mole%: Methane 65 to 100 Ethane 0 to 20 Propane 0 to 10 N-Butane 0 to 5 Iso-Butane 0 to 5 N-Pentane 0 to 1 Iso-Pentane 0 to 1 Neo-Pentane 0 to 1 Nitrogen 0 to 20 Carbon Dioxide 0 to 20 C6+ 0 to 1
(c)	Is secondary system for measuring LNG liquid level fitted and, if so, state type and measuring accuracy	Secondary system for measuring LNG liquid level is fitted. Type of level measuring system: Radar Tank Gauge GLA-310/5 Accuracy: +/- 5 mm Range: 0~20m

12. Cargo Manifolds

(a)	Do manifolds follow requirements of Vol Category "B" of OCIMF "Recommendations for Manifolds for Refrigerated Liquefied Natural Gas Carriers (LNG)" 2nd Edition — 1994? (If "No", state variations)	No, the vessel follows version Second Edition 2018 of OCIMF "Recommendations for Manifolds for Refrigerated Liquefied Natural Gas Carriers (LNG)"
(b)	State layout of liquid and vapour connections	1. Elevated manifold: L-V-L 2*L: 12 " ANSI 300 1*V: 12" ANSI 150 2. Fore manifold: L-V-L 2*L: 8" ANSI 300 1*V: 6" ANSI 150
(c)	Distance of the centre of manifolds from amidships	1. Elevated manifold: 0 mm 2. Fore manifold: 28300 mm
(d)	Distance of presentation flange from ship's side	1. Elevated manifold: Liquid: 3115mm Vapour: 3230mm
		2. Fore manifold: Liquid: 3239mm Vapour: 3350 mm
(e)	Distance of presentation flange from ship's rail	1. Elevated manifold: Liquid: 3047mm Vapour: 3364mm 2. Fore manifold: Liquid: 3179mm Vapour: 3290 mm
(f)	Height of manifold centre above keel	N/A
(g)	Size and location of liquid nitrogen loading connection	N/A
(h)	Elevation above baseline	1a. Elevated manifold Stbd: Liquid: 20700 mm Vapour: 20700 mm 1b. Elevated manifold Port: Liquid: 21800 mm Vapour: 21800 mm 2. Fore manifold: Liquid: 15300 mm Vapour: 15300 mm
(i)	Elevation above design waterline	1a. Elevated manifold Stbd: Liquid: 14350 mm Vapour: 14350 mm 1b. Elevated manifold Port: Liquid: 15450 mm Vapour: 15450 mm 2. Fore manifold: Liquid: 8950 mm Vapour: 8950 mm

13. Emergency Shutdown System and Ship/Shore Compatibility

(a)	At what cargo level (%) is overflow protection activated?	99%
(b)	Does overflow protection activate the following: Trip ESD system? Close manifold valves? Trip cargo pumps? Trip ship/shore link system?	Trip ESD system? V Close manifold valves? V Trip cargo pumps? V Trip ship/shore link system? V
(c)	What ship/shore link systems are installed: Optical Fibre Link Electric Links — Pyle-National / Miyake connector Pneumatic ESD Link	Optical Fibre Link V Electric Links: PYLE 37 way and 5-pin SIGGTO connectors No Miyake connector Pneumatic ESD Link V Vessel SSL system in compliance with ISO20519 and ISO28460. It combines electric (PYLE 37 way and 5-pin SIGGTO connectors), Fiber optic and pneumatic links. The system shall enable the terminal to release the ESD on the vessel by a remote fixed wired connection.

14. Bunkers

(a)	Capacity of fuel oil bunker tanks @ 98% (SG 0.99)	N/A
(b)	Capacity of gas oil bunker tanks @ 98% (SG 0.86)	225.7 MT
(c)	Maximum bunker loading rate	70 MT/hr
(d)	Segregated low sulphur fuel oil storage capacity	N/A

15. Fresh Water Capacity

(a)	Capacity of fresh water generators	5 MT per day Reverse Osmosis type
(b)	Distilled capacity	N/A
(c)	Domestic capacity	MT 96
(d)	Distilled consumption	N/A
(e)	Domestic consumption	N/A

16. Inert Gas Generation

(a)	Type and make of equipment	N/A
(b)	Capacity	N/A
(c)	Quality of gas O2 Max	N/A
(d)	Quality of gas CO Max	N/A
(e)	Quality of gas SO2 Max	N/A
(f)	Quality of gas NOx Max	N/A
(g)	Dew point	N/A
(h)	Dew point measurement systems available on-board:	Portable: SHAW MODEL SADP-R Fixed / local: Installed in the nitrogen generator systems.

17. Nitrogen

(0)	Turns and sometime of wither one consenting analysis	1.PSA type N2 Generator Type: Atlas MN 1500 Capacity: 700Nm3/h (20 °C @ 1 bara), purity 97vol.%
(a)	Type and capacity of nitrogen generation system	2. Membrane type N2 Generator Type: Atlas NGM3+ Capacity: 70Nm3/h (20 °C @ 1 bara), purity: 97vol.%
(b)	Consumption	N/A
(c)	Liquid nitrogen storage	N/A
(d)	Nitrogen generator capacity	For PSA, 16800 Nm3 per day For Membrane, 1680 Nm3 per day
(e)	Pressure tank	One N2 buffer tank used for N2 purging, 5m3, design pressure: 10barg

18. Gas Compressors

(a)	Low duty (fuel gas compressor): No. and capacity	Refer to item10, (c), (d)
(b)	Low duty (fuel gas compressor): make	Refer to item10, (c), (d)

19. Electrical Generating

(a)	Number of electric generators: Diesel Electric Propulsion	Main: 4 Emergency: 1
(b)	Type of electric generators	Main: ABB AMG 0500M Emergency: LSA M46.3 M7
(c)	Output of electric generators	Main: 1120kW Emergency: 200kW
(d)	Fuel type and quantity at full load of electric generators	Dual Fuel
(e)	Power required for discharge / de-ballasting at full rate	Unloading without Vapour Return From Shore + Fuel Supply from BOG Compressor and Fuel Pump: 4 cargo pump: 580kW 1 BOG compressor: 83kW 1 fule pump: 20kW 1 HPU, SVC: 8kW 1 glycol pum: 17kW UPS power: 15kW 2 ballast pump: 40kW Cooling water pump:90kW Fuel pump:4.6kW TOTAL: 857.6 kW

20. Deck Machinery

(a)	Winches	No:6 Pull Type: Electro-hydraulic Brake Holding Force: 356kN
(b)	Wires UHMWPE ropes + Snap Back arrestor	Size: Φ28mm x 220m B.S: 445KN
(c)	No. Wires Soft Forward	6
(d)	No. -Wires Soft Aft	6
(e)	Soft Fitted with Synthetic Tails	Length and Size: Nylon 11mtrs/560 KN B.S: according MEG4
(f)	Derricks, Cranes – Type and SWL	Two (2) cargo cranes Ex-proof electro-hydraulic driven knuckle boom, 5.0 Mtons / 4 – 22 mtrs One (1) provision crane, 3.0 Mtons / 4 mtrs

21. Navigation and Communications

(a)	Type and number of radar sets fitted	MODEL: JMR-9225-6X No.1 RADAR X-BAND MODEL: JMR-9230-S No.2 RADAR S-BAND
(b)	Is an approved GMDSS installed? (Type?)	GMDSS combined in the WHC include of 2sets Inm-C (JUE-87-JR(SH1)/JUE-87-JR(SH1) and MF/HF (JSS-2250SC(SH3) etc Radio equips
(c)	Is an additional SatCom system installed? (Type?)	FBB-(JUE-251) installed only VSAT
(d)	Is Suez Canal Projector fitted?	Yes

22. Crew

(a)	The Officers may be of the following Nationalities	According flag rules
(b)	Number of Officers (Minimum)	5 - MSM still to be defined
(c)	Number of Crew (Minimum)	5 - MSM still to be defined

23. List of Compatible LNG Terminals/Receiving Vessels

Load Ports	Discharge Ports
FSRU TOSCANA	FRSU TOSCANA
ROTTERDAM (Gate Terminal)	
ZEENBRUGE (Fluxys Terminal)	
BARCELONA (Enagas Terminal)	
RAVENNA (PIR Terminal)	
FOS Terminal	

24. List of Visited LNG Terminals at the Date of Vessel Delivery

Load Ports	Discharge Ports
N/A	N/A
N/A	N/A
N/A	N/A