P E T R O L E U M

e-mail : TBD
Fax:
Phone:

Supplier: ROLLS-ROYCE MARINE AS OFFSHORE - ENGINES
P.O. BOX 924
SENTRUM BERGEN
NORWAY

Ship To: TBD

Phone: TBD **Fax:** TBD

Phone: TBD **Fax:** TBD
e-mail:
Contact:
Port: PORT KLANG

Issue Date: 03/19/2013 **Contract No.:** **PO Type:** PO **RFQ No.:**
Account No.: 12 - KM3 **Local Tax:** Exempt **National Tax:** Subject **Delivery By:** 03/14/2014
Invoice To: TBD **Ship Via:** OCEAN FREIGHT **Terms:** PROGRESSIVE PAYMENT
TBD
KUALA LUMPUR MALAYSIA

Bud # SETR-8

Remarks: **Back Charge:**

No.	Qty Unit	Description	Unit Price	Extended Price
	OFFICE (OFF)	**IMO No.:** **Hull No.:**		
		RIG EQUIPMENT (CAPITAL)		
1	6.00UNIT	MAIN GENERATING SETS THE ENGINES WILL BE BUILT ACCORDING TO IMO TIER II, REGARDING NOX REGULATIONS. THE ENGINE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE IS INCLUDED. NUMBER OF GENERATING SETS.....6 ENGINE TYPE;4-STROKE, TURBOCHARGED, INTERCOOLED.....C25:33L6ACD MAXIMUM CONTINUOUS ENGINE RATING (MCR).....1920 KW MAXIMUM CONTINUOUS ALTERNATOR RATING.....1843 KW ALTERNATOR EFFICIENCY.....96 % RATED OUTPUT , ELECTRIC (WITH COS PHI=0,80).....2303 KVA ENGINE SPEED AT MCR.....900 RPM NUMBER OF CYLINDERS.....6 CYLINDER BORE.....250 MM PISTON STROKE.....330MM BREAK MEAN EFFECTIVE PRESSURE AT MCR.....26,4 BAR SPECIFIC FUEL-OIL CONSUMPTION AT MCR.....182 G/KWH+5% SPECIFIC LUB-OIL CONSUMPTION AT MCR.....0,7 G/KWH DIRECTION OF ROTATION : CLOCKWISE SEEN TOWARDS FLYWHEEL. CLASSIFICATION SOCIETY : ABS + A1, COLUMN STABILIZED DRILLING TENDER UNIT RATINGS ARE ACCORDING TO ISO 3046/1. THE FOLLOWING OPERATING CONDITIONS WILL HOWEVER APPLY WITHOUT ANY DERATING (ISO RATINGS IN BRACKETS). BAROMETRIC PRESSURE.....1000 MBAR TURBOCHARGER AIR SUCTION TEMPERATURE.....MAX. + 45 °C (25°C) TURBOCHARGER AIR SUCTION WITHOUT BLOW-OFF.....MIN. 0 °C CHARGE AIR COOLING WATER INLET TEMP.....MAX. + 37 °C (25°C) RELATIVE HUMIDITY.....60 % (30 %) GENERATING SET(S) TO BE DELIVERED, WITH THE FOLLOWING EQUIPMENT: 01.04 1 OFF TURNING GEAR, ELECTRICALLY OPERATED, INCLUDING STARTER AND CONTROL UNIT. PORTABLE BETWEEN ENGINES. 01.05	5,759,000.00	34,554,000.00

6 OFF RESILIENTLY MOUNTED DIESEL ENGINE(S). THE SUPPLY INCLUDES RUBBER ELEMENTS, BLIND FLANGES AND COUPLINGS FOR ALL PIPE CONNECTIONS. FLEXIBLE PIPE CONNECTIONS ARE LOOSE SUPPLIED.

01.06
6 OFF FLEXIBLE COUPLING(S), BETWEEN ENGINE AND GENERATOR.

01.08
1 OFF PUMP FOR ADJUSTMENT AND CHECK OF OPENING PRESSURE, FUEL OIL INJECTION NOZZLE.

01.09
1 OFF PNEUMATICALLY DRIVEN HYDRAULIC PUMP FOR TIGHTENING TOOL.

01.10
6 OFF COMMISSIONING SPARES

01.11
1 SET SPECIAL TOOLS ACCORDING TO CLASSIFICATION SOCIETY REQUIREMENT.

01.12
1 SET LIFTING AND TRANSPORTATION EQUIPMENT.

2	1.00UNIT	EMERGENCY GENERATING SET 1 OFF SDT EMERGENCY GENSET POWERED BY MTU 12V4000P83, 1525KWE/ 1906KVA, COS PHI: 0,8, 60HZ, 690V, 1800RPM, CLASS: ABS. FOR DETAILS PLEASE REFER TO THE ATTACHED TECHNICAL SPESIFICATION 91533-001 SPEC. DATED 27.11.2012	4,846,000.00	4,846,000.00

SDT EMERGENCY GENSET BA 1906 KVA / 1525 KW

- GENERATOR RATED OUTPUT: 1906 KVA
- RATED VOLTAGE: 690 VOLTS
- NOMINAL SPEED: 1800 RPM
- FREQUENCY: 60 CYCLES
- POWER FACTOR: 0,8
- PHASES: 3 / N
- ENGINE AND GENERATOR ARE CONNECTED VIA A FLEXIBLY COUPLING AND FLANGED TOGETHER VIA BELL HOUSING;
- ENGINE AND GENERATOR ARE FLEXIBLY MOUNTED ON A COMMON STEEL BASE FRAME;
- GENSET IS DESIGNATED FOR RIGID MOUNTING TO THE PLATFORM STRUCTURE;

MOUNTED ON THE COMMON BASE FRAME ARE FOLLOWING COMPONENTS:
- FUEL DUPLEX PRE FILTER WITH WATER SEPARATOR
- LUBE OIL EXTRACTION VIA HAND PUMP
- LUBE OIL PRIMING PUMP
- COOLANT PRE HEATING DEVICE
- LOCAL OPERATIONAL PANEL (LOP)
- MECHANICAL DRIVEN RADIATOR COOLER (APP.75 KW)
- LIFTING LUGS LOOSE SUPPLY
- SET OF FLEXIBLE CONNECTION LINES FOR FUEL, OIL, WATER,EXHAUST
- BACK UP HYDRAULIC STARTER UNIT
- NAME PLATES IN ENGLISH LANGUAGE

PAINTING
- GENSET AND ALL MOUNTED PARTS PAINTED IN: RAL 7001 SILVER GREY
- ELECTRICAL SWITCHBOARDS AND CABINETS PAINTED IN: RAL 7035 LIGHT GREY/STRUCTURE

FUEL DEFINE
- ACC. EN590 TO ASTM D975-00, DMX

CERTIFICATES
- EIAPP CERTIFICATE (IMO TIER II)

CLASSIFICATION

- AMERICAN BUREAU OF SHIPPING (ABS) DIMENSIONS

GENSET : APP L X W X H 6.200 MM X 3.250 MM X 3.500 MM
WEIGHT: APP. 15.000 KG

2. ENGINE
MANUFACTURER: MTU
TYPE: 12V4000 P83
POWER: 1680 KW AT 1800 RPM CONTINUOUS WITH VARIABLE LOAD

- 12-CYLINDER V-ENGINE
- LIQUID-COOLED FOUR-STROKE DIESEL ENGINE,
- ANTICLOCKWISE DIRECTION OF ROTATION (VIEWED ON DRIVING END) WITH DIRECT FUEL INJECTION,
- CONTROLLED EXHAUST GAS TURBO CHARGING,
- CHARGE AIR COOLING

AND THE FOLLOWING BASIC EQUIPMENT

- GREY CAST-IRON CRANKCASE
- FLYWHEEL HOUSING SAE 00
- FLYWHEEL 21"
- OIL PAN
- FORGED CRANKSHAFT
- FORGED CONNECTING RODS
- FOUR-VALVE, INDIVIDUAL CYLINDER HEADS
- PISTONS WITH ALUMINIUM SKIRT AND CROWN
- PISTON COOLING VIA OIL SPRAY NOZZLE
- GEAR TRAIN FOR ACCESSORY DRIVES
- LIQUID COOLED EXHAUST MANIFOLDS
- VIBRATION DAMPER
- ALL NECESSARY ON-ENGINE AIR, EXHAUST, COOLANT, FUEL AND OIL PIPE WORK

STARTING SYSTEM

- ELECTRICAL STARTER (24VDC,1X 15KW) Æ RIGHT SIDE
- HYDRAULIC STARTER Æ LEFT SIDE (SEE PARAGRAPH 5)

OIL SYSTEM

- FORCED-FEED LUBRICATION SYSTEM WITH PISTON COOLING
- LUBE OIL CIRCULATION PUMP WITH SAFETY VALVE
- STANDARD OIL PAN
- LUBE OIL MULTI-STAGE FILTER
- LUBE OIL LEVEL MONITORING SYSTEM
- LUBE OIL PRIMING PUMP
- LUBE OIL HEAT EXCHANGER
- LUBE OIL CENTRIFUGAL FILTER
- OIL FILTER NECK AND OIL DIPSTICK FOR MEASUREMENT ON NON-RUNNING ENGINE
- CLOSED CRANKCASE VENTILATION

FUEL SYSTEM

- FUEL DELIVERY PUMP;
- DUPLEX FUEL MAIN FILTER (SWITCHABLE)
- FUEL INJECTION PIPES WITH LEAKAGE MONITORING
- " COMMON RAIL" FUEL INJECTION SYSTEM WITH HIGH-PRESSURE PUMP, PRESSURE ACCUMULATOR AND ELECTRONICALLY CONTROLLED FUEL INJECTION WITH CYLINDER CUT OUT SYSTEM;
- FUEL SYSTEM SAFETY EQUIPMENT WITH JACKETED H.P. FUEL LINES BETWEEN H.P. PUMP AND INJECTORS, INCL. LEAK-OFF FUEL TANK

COOLING SYSTEM

- COOLANT CIRCULATION PUMP AND COOLANT THERMOSTAT FOR JACKET WATER COOLING CIRCUIT
- COOLANT CIRCULATION PUMP AND COOLANT THERMOSTAT FOR CHARGE AIR COOLING CIRCUIT

O ENGINE RECOOLING VIA BELT DRIVEN FAN (APP.1X 75 KW)

COMBUSTION AIR SYSTEM

- EXHAUST TURBOCHARGERS
- INTERCOOLER
- AIR SHUT OFF FLAPS

AIR-INTAKE SYSTEM
- AIR INTAKE VERTICAL
- SET OF DRY-TYPE AIR FILTERS WITH SERVICE INDICATOR
- INTAKE AIR DAMPER

EXHAUST SYSTEM
- LIQUID COOLED, ON-ENGINE EXHAUST MANIFOLDS
- MTU TURBO CHARGING WITH 2 WATER-COOLED EXHAUST-GAS TURBOCHARGERS

EXHAUST CONNECTION
- ELBOWS WITH BELLOWS AND COMPANION FLANGE FOR RESILIENT CONNECTION

3. ALTERNATOR

MANUFACTURER:	LEROY SOMER
ALTERNATOR TYPE:	LSA 52/53 SERIES
• POWER:	1906 KVA
• POWER (KWELEC.):	1525 KW
• VOLTAGE:	690 VOLT
• SPEED:	1800 RPM
• FREQUENCY:	50 HZ
• POWER FACTOR:	COS. PHI 0, 8
• PHASE:	3 / N
• PROTECTION CLASS	IP 44

ENVIRONMENT:
- AMBIENT TEMPERATURE: MAX. 50°C
- INSULATION CLASS: H
- TEMPERATURE RISE: F

SERVICE:
- PARALLEL OPERATION BETWEEN ALTERNATORS AND THE GRID

MECHANICAL DATA:
- PRIME MOVER: DIESEL ENGINE
- BEARING TYPE: 2 ANTIFRICTION BEARINGS
- TERMINAL BOX: STANDARD
- COOLING ALTERNATOR: AIR (AIR INLET-OUTLET FILTER)

PROTECTION:
- TEMP. STATOR SENSOR: 2 X PT100 EACH PHASE
- BEARING: 1 X PT100 PER BEARING
- SPACE HEATER: 254 V

REGULATION:
- MOUNTING IN THE TERMINAL BOX Æ DIGITAL AVR

GENERAL:
- THREE-PHASE SYNCHRONOUS ALTERNATOR
- BRUSHLESS, SELF-EXCITED, SELF-REGULATED
- STATIC TRANSFORMER
- TROPICAL INSULATION
- GENERATOR POWER CABLE INLET DESIGN: ANTIMAGNETIC CONNECTION PLATE
- CABLE GLANDS: DIMENSIONS HAS TO BE PROVIDED BY CUSTOMER

4. ENGINE MANAGEMENT AND CONTROL SYSTEM

ENGINE CONTROL AND MONITORING SYSTEM (ADEC)
(EXTENDED SCOPE ACCORDING TO CLASSIFICATION SOCIETY REGULATION, WITH TYPE TEST APPROVAL)
COMPRISING:

ENGINE CONTROL UNIT (ECU)

ENGINE CONTROL UNIT (ECU) IN SHEET-METAL HOUSING, WIRED AND ENGINE-MOUNTED, WITH PLUG CONNECTORS FOR CONNECTION TO THE LOCAL OPERATING PANEL (LOP), WITH THE FOLLOWING FUNCTIONS/SUBASSEMBLIES:

•ENGINE SPEED CONTROL IN RESPONSE TO SPEED SETTING SIGNAL WITH FUEL INJECTION AND SPEED LIMITATION AS A FUNCTION OF ENGINE STATUS AND OPERATING CONDITIONS
- DATA PROCESSING LOGIC FOR ANALOGY AND BINARY SIGNALS
- INTERFACE FOR DATA TRANSFER TO CAN FIELD BUS FOR REMOTE CONTROL AND SHIP'S SIDE MONITORING
- INTERFACE RS 232 FOR CONNECTION OF MTU DIALOG UNIT

ENGINE MONITORING UNIT (EMU)

ENGINE MONITORING UNIT (EMU), IN SHEET-METAL HOUSING, WIRED AND ENGINE-MOUNTED, WITH PLUG CONNECTORS FOR CONNECTION TO THE LOCAL OPERATING PANEL (LOP), WITH THE FOLLOWING FUNCTIONS/SUBASSEMBLIES:
- DATA PROCESSING LOGIC FOR ANALOG AND BINARY SIGNALS
- INTERFACE FOR DATA TRANSFER TO CAN FIELD BUS FOR SHIP'S SIDE MONITORING SYSTEM

ON-ENGINE SENSORS AND WIRING

SET OF TYPE APPROVED SENSORS, ENGINE-MOUNTED AND WIRED TO THE ECU, CONSISTING OF:
- ELECTRIC SPEED TRANSMITTERS FOR:

O CRANKSHAFT
O CAM SHAFT
O EXHAUST TURBOCHARGER NO. 1
O EXHAUST TURBOCHARGER NO. 2

- TEMPERATURE TRANSMITTERS (PT1000) FOR:

O ENGINE LUBE OIL
O ENGINE COOLANT
O INTAKE AIR
O CHARGE AIR
O RAIL FUEL

- TEMPERATURE TRANSMITTERS (PT100) FOR:

O CHARGE AIR VALVE
O EXHAUST TEMPERATURE A-SIDE
O EXHAUST TEMPERATURE B-SIDE

- PRESSURE TRANSMITTERS (0.5 - 4.5 V) FOR:

O ENGINE LUBE OIL
O ENGINE COOLANT
O CHARGE AIR
O CRANKCASE AIR
O FUEL AFTER MAIN FILTER
O RAIL FUEL

- LEVEL MONITOR FOR ENGINE COOLANT
- LEVEL MONITOR FOR FUEL LEAKAGE IN HIGH-PRESSURE SYSTEM

SET OF TYPE APPROVED SENSORS, ENGINE-MOUNTED AND WIRED TO THE EMU, CONSISTING OF:
ELECTRIC SPEED TRANSMITTER FOR:
- CRANKSHAFT
- TEMPERATURE TRANSMITTER (PT1000) FOR:
- ENGINE COOLANT
- PRESSURE TRANSMITTERS (0.5 - 4.5 V) FOR:
- ENGINE LUBE OIL

SET OF ADDITIONAL TYPE APPROVED SENSORS, ENGINE-MOUNTED AND WIRED TO PLUG CONNECTORS:
2 LIMIT SWITCHES ON BARRING GEAR ACCESS (A/B-SIDE, FOR START-UP INTERLOCK)

STANDARD MONITORING AND CONTROL SYSTEM
(ACCORDING TO CLASSIFICATION SOCIETY REGULATION,)

4.1 LOCAL OPERATING PANEL (LOP) - (BASIC SCOPE)

LOCAL OPERATING PANEL (LOP), IN SHEET METAL HOUSING, READY FOR SEPARATE INSTALLATION IN ENGINE ROOM, WITH TERMINAL STRIP FOR

SHIP'S SIDE WIRING AND PLUG CONNECTORS FOR CONNECTION TO THE ENGINE CONTROL UNIT ECU, ENGINE MONITORING UNIT EMU AND DIALOG UNIT.

LOP WITH THE FOLLOWING EQUIPMENT/FUNCTIONS:
• ALPHANUMERIC, DIGITAL LCD DISPLAY FOR INCREMENTAL ANALOG AND DIGITAL DISPLAY OF MEASURED DATA AND ALARMS IN CASE OF EXCEEDING LIMIT VALUES INCL. CONTROL BUTTONS FOR MENU AND ILLUMINATION CONTROL

- COMBINED CONTROL AND DISPLAY ELEMENTS FOR:
- READY FOR OPERATION
- LOCAL CONTROL
- ENGINE START
- ENGINE STOP
- EMERGENCY STOP
- ENGINE SPEED INCREASE/DECREASE
- OVERSPEED TEST
- LAMP TEST
- ALARM ACKNOWLEDGEMENT LOP
- WATER IN FUEL PRE FILTER

LUBE OIL PRIMING/INTERVAL PUMP CONTROL UNIT (PPC)

CONTROL UNIT (PPC), FOR LUBE OIL PRIMING/INTERVAL PUMP, IN SHEET METAL HOUSING, READY FOR SEPARATE INSTALLATION IN ENGINE ROOM, WITH TERMINAL STRIP FOR SHIP'S SIDE WIRING.
PPC WITH THE FOLLOWING EQUIPMENT/FUNCTIONS:
- MANUAL/OFF/AUTOMATIC SELECTOR SWITCH
- 24 VDC CONTROL CIRCUITS WITH INTERFACE MODULE (PIM 2) FOR START SEQUENCE / INTERVAL AND CAN BUS CONNECTION
- BREAKER SWITCH WITH OVER CURRENT TRIP
- BINARY SIGNAL OUTPUT FOR PUMP CONTROL MALFUNCTION

PARALLEL INTERFACE TO THE GENSET CONTROL AND TO THE MONITORING SYSTEM SUPPLIED BY THE CUSTOMER

THE FOLLOWING EQUIPMENT/INTERFACES ARE AVAILABLE FOR DATA COMMUNICATION WITH THE ELECTRONICS COMPONENTS:

INTERFACE COUPLER FOR INSTALLATION IN CLOSED SWITCHGEAR CABINET FOR INTERFACE RELATED CAN BUS TO FOLLOWING PARALLEL I/O SIGNALS
•BINARY INPUTS FOR PUSHBUTTONS: ENGINE START, ENGINE STOP
•BINARY OUTPUTS FOR THE MESSAGES: ENGINE READY FOR OPERATION, ENGINE CONTROL REMOTE,
ENGINE START ACTIVATED, ENGINE STOP ACTIVATED,
ENGINE EMERGENCY STOP ACTIVATED, ENGINE READY FOR START;
ENGINE RATED SPEED REACHED

• BINARY OUTPUT FOR COMMON ALARM MESSAGE ENGINE STOP EXPECTED, ENGINE STOP ACTIVATED

ANALOG OUTPUT (0-10V / MAX. 5 MA) FOR CONNECTION OF ANALOG ENGINE-SPEED INDICATORS:
- ENGINE SPEED
- ENGINE LUBE OIL PRESSURE
- ENGINE COOLANT TEMPERATURE

INPUT / OUTPUT AT LOCAL OPERATING PANEL (LOP):
- BINARY INPUTS FOR:
- ENGINE EMERGENCY STOP
- PLANT ON/OFF
- COMMON ALARM ACKNOWLEDGEMENT LOP
- BINARY OUTPUT COMMON ALARM FOR LOP

ENGINE SHUTDOWN ONLY IN CASE OF ENGINE OVER SPEED

NOTE:
- 450 V AC HAS TO BE SUPPLIED FROM CUSTOMER
- 24VDC FOR ENGINE GOVERNOR HAS TO BE SUPPLIED FROM CUSTOMER

		• 24 V DC UPS FOR ENGINE GOVERNOR HAS TO BE SUPPLIED FROM CUSTOMER 6. AUXILIARY SYSTEMS POWER TRANSMISSION • FLEXIBLE COUPLING FOR GENERATOR DRIVE, MOUNTED ON THE FLYWHEEL COOLANT PRE HEATING DEVICE • ELECTRIC COOLANT PREHEATING UNIT WITH: (450 VAC, 3 PH/N, 60 HZ, 4,5 KW) – CIRCULATION PUMP – CONTACTORS AND THERMOSTAT – WIRED TO TERMINAL BOX LUBE OIL PRIMING PUMP • ELECTRICAL PUMP (450VAC/3PH/ 60HZ/1KW) BACK UP STARTING DEVICE (HYDRAULIC STARTER) • 1 PC. HYDROTOR (HYDRAULIC STARTER) • 1 PC. STARTING VALVE • 1 PC. ACCUMULATOR • 1 PC. HAND PUMP • 1 PC. OIL RESERVOIR • 1 PC. HIGH PRESSURE FILTER • 1PC. MANOMETER RADIATOR COOLER • ENGINE RECOOLING VIA BELT DRIVEN RADIATOR COOLER O INCL. COOLANT EXPANSION TANK O POWER APP. 1 X 75 KW 7. SUNDRIES • TVC TORSIONAL VIBRATION CALCULATION • FAT TEST BENCH REPORT OF ENGINE, ALTERNATOR • FAT GENSET ACCEPTANCE TEST REPORT • 1 SDT-DOCUMENTATION (ENGLISH) ON CD-ROM AND IN HARDCOPY PER UNIT		
3	1.00 ASSBLY	ONE BATTERY CHARGER, FOR THE EMERGENCY GEN. SET, INCL. TWO STARTING BATTERIES (AGM/GEL TYPE), EACH OF THEM 12V AND ONE BATTERY BOX SUITABLE FOR MAX. 50 DEGREE C AMBIENT TEMPERATURE, AND 6 START ATTEMPTS X 15 SECONDS(LOOSE SUPPLIED).	70,000.00	70,000.00
4	1.00 LOT	DELIVERY TERMS: CIP PORT KLANG, MALAYSIA, INCOTERMS 2010, ROLLS-ROYCE STANDARD PACKING INCLUDED COST INCLUDED IN ABOVE PRICE OF ENGINES	0.00	0.00
5	1.00 LOT	TERMS OF PAYMENT: 20 % ON ORDER 20 % ON DELIVERY OF INSTALLATION MANUAL, BUT LATEST WITHIN 15TH JUNE, 2013 60 % OF THE PRICE WHEN ROLLS-ROYCE CONFIRMS SHIPMENT READY FOR DISPATCH. AN IRREVOCABLE LETTER OF CREDIT, IN A FORMAT AND ISSUED BY A BANK ACCEPTABLE TO ROLLS-ROYCE, IS TO BE MADE AVAILABLE WITH ROLLS-ROYCE STANDARD BANK BY PAYMENT, RECEIVED BY ROLLS-ROYCE OR ROLLS-ROYCE STANDARD BANK 90 DAYS PRIOR TO SHIPPING DATE. PAYMENT OF LC TO BE RELEASED UPON RECEIPT OF SHIPPING DOCUMENTS (BILL OF LADING).	0.00	0.00
6	1.00 LOT	COMMISSIONING ROLLS-ROYCE PROVIDES, AT NO EXTRA COST, ENGINEERING ASSISTANCE FOR COMMISSIONING AND TEST / TRIALS OF THE SUPPLIED EQUIPMENT FOR FOLLOWING DAYS(BASED ON ONE SERVICE ENGINEER WORKING 10 HOURS/DAY), INCLUDING TRAVEL COST (COMPENSATION FOR TRAVEL TIME AND EXPENSES), BOARD AND STAY:	0.00	0.00

HOURS/DAY), INCLUDING TRAVEL COST (COMPENSATION FOR TRAVEL TIME AND EXPENSES), BOARD AND STAY:

- 60 DAYS FOR THE MAIN GENERATING SETS, LIMITED TO 4 TRIPS TO THE SITE OF INSTALLATION
- 5 DAYS FOR THE EMERGENCY GENERATING SET, LIMITED TO 1 TRIP TO THE SITE OF INSTALLATION

"CONDITIONS FOR THE PROVISIONS OF TECHNICAL PERSONNEL ABROAD - OCTOBER 1995" SHALL APPLY FOR SUPERVISION, COMMISSIONING AND ASSISTANCE.

PRIOR TO COMMISSIONING THE SHIPYARD SHALL HAVE CARRIED OUT THE INSTALLATION IN ACCORDANCE WITH INSTRUCTIONS GIVEN BY ROLLS-ROYCE.

COMMISSIONING AND/OR ADDITIONAL ASSISTANCE MUST BE REQUESTED WITH AT LEAST TWO WEEKS NOTICE.

THE SERVICE ENGINEER(S)' WAITING TIME AND IDLE TIME CAUSED BY OTHERS, WILL BE LOGGED BY THE SERVICE ENGINEER(S), AND SHALL BE COUNTERSIGNED BY A RESPONSIBLE REPRESENTATIVE OF THE PURCHASER/SHIPYARD AT SITE. SUCH TIME WILL BE INVOICED TO THE PURCHASER AT THE STANDARD ROLLS- ROYCE RATE FOR SERVICE ENGINEERS.

ADDITIONAL ASSISTANCE, AS WELL AS WAITING/IDLE TIME FOR WHICH ROLLS-ROYCE IS NOT RESPONSIBLE, WILL BE CHARGED ACCORDING TO OUR PREVAILING RATES (INCLUDING CONSEQUENTIAL BOARD AND LODGING EXPENSES). FOR SUCH ADDITIONAL ASSISTANCE ORGALIME 95 CONDITIONS SHALL APPLY.

INSTALLATION OR SUPERINTENDING SERVICES ARE NOT INCLUDED. IF AGREED BETWEEN THE PARTIES, A QUALIFIED SERVICE ENGINEER WILL BE MADE AVAILABLE TO SUPERINTEND THE INSTALLATION ONBOARD AND TO GIVE OPERATING AND MAINTENANCE INSTRUCTIONS. THE COST OF THIS SERVICE WILL BE CHARGED ACCORDING TO OUR PREVAILING RATES. ORGALIME "CONDITIONS FOR THE PROVISIONS OF TECHNICAL PERSONNEL ABROAD - OCTOBER 1995" WITH AMENDMENTS SHALL APPLY FOR SUCH WORK.

WARRANTY

THE WARRANTY PERIOD SHALL COMMENCE UPON DELIVERY READINESS OF THE MAIN EQUIPMENT ACCORDING TO THE AGREED INCOTERM, EXPIRING 24 MONTHS THEREAFTER OR 12 MONTHS AFTER THE SHIPYARD'S DELIVERY OF THE VESSEL TO THE SHIP OWNER, WHICHEVER PERIOD IS THE SHORTEST.

THE WARRANTY ACCORDING TO PRECEDING PARAGRAPH IS VALID ON CONDITION THAT THE EQUIPMENT IS STORED AND THE SYSTEM IS INSTALLED PROPERLY AND ACCORDING TO ROLLS-ROYCE INSTRUCTIONS.

CLASS SURVEY

THE EQUIPMENT WILL BE DELIVERED IN ACCORDANCE WITH THE REQUIREMENTS OF ABS AT THE DATE OF THIS QUOTATION.

TESTS OF THE EQUIPMENT WILL BE CARRIED OUT AT OUR WORKS PRIOR TO DESPATCH. ALL CHARGES FOR CLASSIFICATION PERFORMED IN ROLLS-ROYCE WORKS ARE INCLUDED IN THE QUOTED PRICE.

VENDOR TO HAVE ABS ATTEND FAT FOR ALL ENGINES AT OWN COST.

GENERAL TERMS

THIS QUOTATION IS BASED ON THE CONDITIONS STATED IN THE ENCLOSED ORGALIME S2000 WITH FOLLOWING AMENDMENTS:

THE FOLLOWING AMENDMENT SHALL APPLY TO ARTICLE 27:
«IF ROLLS-ROYCE AND THE PURCHASER AGREE THAT ROLLS-ROYCE SHALL

CONDUCT SERVICE/REPAIR WORK FOR WHICH ROLLS-ROYCE IS NOT LIABLE ACCORDING TO THIS CONTRACT, ORGALIME "CONDITIONS FOR THE PROVISIONS OF TECHNICAL PERSONNEL ABROAD - OCTOBER 1995" WITH AMENDMENTS SHALL APPLY FOR SUCH WORK.»

THE FOLLOWING AMENDMENT SHALL APPLY TO ARTICLE 30:
«OTHER COSTS INCURRED WHEN RECTIFYING DEFICIENCIES, SUCH AS BUT NOT RESTRICTED TO TOWAGE, DOCKING, DIVERS, CRANE RENTAL, FUEL, WARPING, SCAFFOLDING, ASSISTANCE BY YARD PERSONNEL AND SERVICES AND OTHER SIMILAR COSTS SHALL BE BORNE IN THEIR ENTIRETY BY THE PURCHASER.»

THE FOLLOWING AMENDMENT SHALL APPLY TO ARTICLE 35, SECOND PARAGRAPH:
« ROLLS-ROYCE'S LIABILITY DOES NOT APPLY WHEN THE PURCHASER FAILS TO COMPLY WITH INSTRUCTIONS GIVEN BY ROLLS-ROYCE IN INSTALLATION-, OPERATION- OR MAINTENANCE MANUALS.»

ART. 38 FIRST PARAGRAPH SHALL BE READ AS FOLLOWS:
«THE SUPPLIER SHALL NOT BE LIABLE FOR ANY DAMAGE TO PROPERTY, PERSONAL INJURY OR DEATH CAUSED BY THE PRODUCT AFTER IT HAS BEEN DELIVERED AND WHILST IT IS IN THE POSSESSION OF THE PURCHASER OR HIS SUCCESSOR(S). NOR SHALL THE SUPPLIER BE LIABLE FOR ANY DAMAGE TO PRODUCTS MANUFACTURED BY THE PURCHASER, OR TO PRODUCTS OF WHICH THE PURCHASER'S PRODUCTS FORM A PART.
IF THE SUPPLIER INCURS LIABILITY TOWARDS ANY THIRD PARTY FOR SUCH DAMAGE TO PROPERTY, PERSONAL INJURY OR DEATH AS DESCRIBED IN THE PRECEDING PARAGRAPH, THE PURCHASER SHALL INDEMNIFY, DEFEND AND HOLD THE SUPPLIER HARMLESS.»

19.00 DOCUMENTATION, TECHNICAL CALCULATIONS AND TESTING

19.013 OFF

2 OFFINSTALLATION INSTRUCTIONS AND DRAWINGS TO YARD/ CONSULTANTS.

ELECTRONIC INSTALLATION INSTRUCTIONS AND DRAWINGS TO YARD / CONSULTANTS. PDF-FORMAT ON CD

DOCUMENTATION SUPPLIED BY ROLLS-ROYCE MARINE AS:

1 SET CERTIFICATES FROM THE CLASSIFICATION SOCIETY.
(ALL TYPE TEST CERTIFICATES FOR ALL EQUIPMENT AND BOXES)

1 SET ENGINE INTERNATIONAL AIR POLLUTION PREVENTION (EIAPP) CERTIFICATE ISSUED BY DNV.

1 SET TORSIONAL VIBRATION CALCULATIONS.

19.02
3 OFF OPERATING INSTRUCTIONS IN ENGLISH. IN PDF-FORMAT.

2 OFF ELECTRONIC OPERATING INSTRUCTIONS IN ENGLISH. IN PDF-FORMAT. ON CD :

- "SERVICE MANUALS" FOR ENGINE
- MAIN DATA.
- MANUFACTURING DATA.
- TEST RESULTS.
- INSTRUCTIONS AND DRAWINGS FOR OPERATION MAINTENANCE AND ORDERING SPARE PARTS.

- "SUNDRY INSTRUCTIONS", WITH INSTRUCTIONS AND SPARE PART LIST.

- "CONTROL SYSTEM" : - SYSTEM DRAWINGS AND INSTRUCTIONS.

TIMES OF DELIVERY FOR "SERVICE MANUALS" AND "SUNDRY INSTRUCTIONS" IS NORMALLY 4 WEEKS FROM DATE OF ENGINE DELIVERY. THE "CONTROL SYSTEM" IS BASED ON "AS BUILT DOCUMENTATION" AND WILL NORMALLY BE DELIVERED 4 WEEKS AFTER COMMISSIONING. PLACE OF DELIVERY AND CONDITIONS OF DISPATCH AS FOR THE ENGINE WHEN NOTHING ELSE IS SPECIFIED.

DRAWINGS, LISTS ETC. ARE BASED ON THE FOLLOWING STANDARDS :
INSTRUMENTATION : ISA S 5.1 (ISO/TC10/SC3).
PIPING-FITTINGS : NS 1710 (ISO/TC8N561).
HYDRAULICS/PNEUMATICS : NS ISO 1219-1,2
ELECTRICAL CIRCUITS : NEN (IEC)

19.04
TECHNICAL CALCULATIONS.

WHEN PURCHASER DELIVERS THE FLEXIBLE COUPLING BETWEEN THE ENGINE AND THE AUXILIARY EQUIPMENT, TORSIONAL DATA WILL HAVE TO BE APPROVED BY ROLLS-ROYCE MARINE AS.

THE AUXILIARY EQUIPMENT MUST WITHSTAND THE VIBRATORY TORQUE EMINATING FROM THE
ENGINE PLANT.

ROLLS ROYCE TO INCLUDE ALL DESIGN AND CALCULATIONS FOR THE P & ID CALCULATIONS FOR ALL 6 ENGINES & 1 EA. EMERGENCY ENGINE

19.05 TESTING.

EVERY DIESEL ENGINE WILL BE TESTED BY ROLLS-ROYCE MARINE AS AT THE FACTORY BEFORE DELIVERY. THE TESTS WILL BE PERFORMED ACCORDING TO ROLLS-ROYCE MARINE AS STANDARDS AND CLASSIFICATION SOCIETIES REQUIREMENTS AS FOLLOWS WITH ABS:

STARTING UP :
INSPECTION OF EQUIPMENT ACC. TO TEST ORDER. CRANKSHAFT DEFLECTION, COLD ENGINE. RUNNING 25% LOAD 1 HOUR.
RUNNING 50% LOAD 1 HOUR.
RUNNING 75% LOAD 1 HOUR. RUNNING 100% LOAD ½ HOUR.

ADJUSTMENT:
AIR AND EXHAUST VALVES. FUEL OIL INJECTION PUMPS.
OVER SPEED TRIP ARRANGEMENT. ALL SENSORS AND SWITCHES.

TEST RUN ON MDO:
RUNNING 100% LOAD 4 HOURS. RUNNING 110% LOAD 1 HOUR. RUNNING 75% LOAD ½ HOUR. RUNNING 50% LOAD ½ HOUR. RUNNING 25% LOAD ½ HOUR.

INSPECTIONS:
CRANKSHAFT DEFLECTION, WARM ENGINE. ONE BIG END BEARING SHELL.

20.00 SURFACE TREATMENT - PACKING

20.01 ANTI-CORROSIVE TREATMENT.

THE ENGINE SUMP IS FILLED WITH PRESERVATIVE OIL, AND DRAINED AFTER THE ENGINE HAS BEEN TICKING OVER FOR 10 MINUTES. ALL PIPE ENDS AND OPENINGS, EXCEPT OIL PIPES, ARE SPRAYED WITH ANTI-CORROSIVE.

ALL MACHINED SURFACES ARE COVERED WITH A THIN OILY ANTI-CORROSIVE FOR THE STORAGE AND INSTALLATION PERIOD.

PAINTING.

THE ENGINE IS CLEANED AND COATED WITH A 50 MICRON ALKALINE PAINTING TYPE RAL
6019(WHITE-GREEN)AFTER COMPLETED FACTORY TEST.

ANY ALTERATIONS IN PAINTING SPECIFICATION HAVE TO BE RECEIVED BY

ROLLS-ROYCE MARINE AS AT LAST 2 MONTHS PRIOR TO DELIVERY DATE. ALTERATIONS MAY LEAD TO PRICE CHANGES.

20.02 PACKING.

THE ENGINE IS COVERED WITH A TARPAULIN. ALL PIPES AND EXHAUST OUTLETS ARE BLINDED. WEATHER TIGHT FOR STORAGE OUTSIDE.

DESICCANT IN ALL ELECTRICAL EQUIPMENT

TOOLS AND SPARE PARTS ARE PACKED IN BOXES MADE OF PLYWOOD WITH STEEL FRAMING AND IN BOXES MADE OF WOOD. ALL BOXES ARE ENCLOSED INSIDE FOR WATER PROTECTION.

HANDLING AND CARE AFTER ARRIVAL.

THE ENGINE MUST BE STORED INDOORS IN A DRY PLACE, PREFERABLY IN A HEATED ROOM. THE TARPAULIN COVER SHOULD NOT BE REMOVED BEFORE MOUNTING. THE ENGINE HAS TO BE CLEANED BEFORE START-UP.

THE ENGINE MUST NOT BE TURNED/CRANKED WITHOUT OIL SUPPLY TO THE BEARINGS.

Currency: NOK
PO Created: 03/14/2013
ISSUED BY LAFOUR, BRIAN

Item Subtotal:	39,470,000.00
Local Tax:	0.00
National Tax / VAT:	0.00
Freight:	0.00
Discount (0.00% except as otherwise noted):	0.00
Total Cost:	39,470,000.00

AUTHORIZED BY
NAME: TBD
DATE

AUTHORIZED BY :
NAME TBD
DATE : 03/19/2014

ACKNOWLEDGEMENT RECEIPT

The undersized hereby acknowledges receipt of this Purchase Order (a copy of which has been retained by us) and accept in accordance to

Signed by : _____
Designation : _____
Date : _____

Company Official Stamp

Kindly attach the copy of our purchase order together with the delivery order and invoice every time you send it to us.